

DOCUMENT RESUME

ED 159 039

SE 024 859

TITLE Worldwide Marine Weather Broadcasts.
INSTITUTION Department of the Navy, Washington, D.C.; National Oceanic and Atmospheric Administration (DOC), Rockville, Md. National Weather Service.
PUB DATE Jul 77
NOTE 130p.
AVAILABLE FROM Superintendent of Documents, U.S. Government Printing Office, Washington, D.C. 20402 (Stock Number 003-018-00083-1; No price quoted)
EDRS PRICE MF-\$0.83 HC-\$7.35 Plus Postage.
DESCRIPTORS *Geographic Regions; *Meteorology; Navigation; Programming (Broadcast); *Radio; *Radio Technology; *Seamen
IDENTIFIERS *Marine Weather Radio; *Weather Broadcasts

ABSTRACT

This publication is a source of marine weather broadcast information in all areas of the world where such service is provided. This publication was designed for the use of U.S. naval and merchant ships. Sections 1 through 4 contain details of radio telegraph, radio telephone, radio facsimile, and radio teleprinter transmissions, respectively. The NOAA Weather Radio continuous broadcasts and Great Lakes marine broadcasts are listed in section 5. In sections 1 through 4 the broadcasts are arranged according to ocean areas. In a particular geographic area, the radio stations providing service for the high sea areas usually are listed first. Each listing is preceded by a three part index number. Following the index number is the name of the radio station and its call sign; next are broadcast times, radio frequencies, and broadcast contents. In sections 1 and 2, the contents are described by a letter code that is explained in the set of notes preceding each section. Throughout the publication, references are made to figures that outline the forecast areas of various countries. These figures follow section 5. The appendix contains supplemental explanatory information. (MR)

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Worldwide Marine Weather Broadcasts

Section 1. Radiotelegraph Broadcasts

Section 2. Radiotelephone Broadcasts

Section 3. Radiofacsimile Broadcasts

Section 4. Radioteleprinter Broadcasts

Section 5. Weather Broadcasts for the Great Lakes Continuous Broadcasts — NOAA Weather Radio (VHF - FM)

Silver Spring, Md.
July 1977

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SE 024 859

Contents

	PAGE
INTRODUCTION.....	1
SECTION 1. RADIOTELEGRAPH BROADCASTS.....	3
SECTION 2. RADIOTELEPHONE BROADCASTS.....	31
SECTION 3. RADIOFACSIMILE BROADCASTS.....	54
SECTION 4. RADIOTELEPRINTER BROADCASTS.....	69
SECTION 5. WEATHER BROADCASTS FOR THE GREAT LAKES Continuous Broadcasts—NOAA Weather Radio (VHF-FM).....	76
FIGURES. (MARINE WEATHER FORECAST AREAS).....	83
APPENDIX.....	112

Introduction

This booklet serves as a source of marine weather broadcast information. It is primarily for the use of U.S. naval and merchant ships, but is available to other ships.

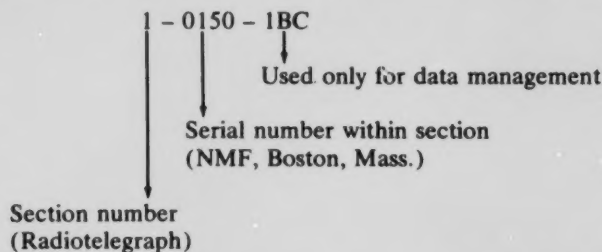
Data processing and electronic photocomposition methods were employed in publishing this edition, necessitating a change in format.

This publication contains information on marine weather broadcasts in all areas of the world where such service is provided. In general, English language broadcasts (or foreign language broadcasts repeated in English) were selected for inclusion in the publication. For areas where English language broadcasts are not available foreign language transmissions are also included.

Details of foreign broadcasts are obtained from World Meteorological Organization Publication No. 9 T.P.4, Volumes C and D, or from information supplied by other countries. Corrections and changes to the broadcast details are distributed by means of the weekly Notice to Mariners issued by Defense Mapping Agency Hydrographic Center.

ORGANIZATION OF PUBLICATION. Sections 1 through 4 contain details of radiotelegraph, radiotelephone, radiofacsimile, and radioteletypewriter transmissions, respectively. The NOAA Weather Radio continuous broadcasts (VHF-FM) and Great Lakes marine broadcasts are listed in Section 5.

In Sections 1 through 4 the broadcasts are arranged according to ocean areas. In a particular geographic area the radio stations providing service for the high seas areas usually are listed first. Each listing is preceded by a three part index number. The following explains the index number:



Following the index number is the name of the radio station and its call sign; next are broadcast times, radio frequencies, and broadcast contents. In Sections 1 and 2, the contents are described by a letter code that is explained in the set of notes preceding each section.

Keep in mind that automated printing imposes some limitations on the format. For example, there are instances where footnotes appear on the next page, separated from the rest of the broadcast details.

Throughout the publication references are made to figures that outline the forecast areas of various countries. These figures follow Section 5.

TRANSMISSION OF WARNINGS. If warnings are in effect for a forecast area they will be included in the scheduled weather broadcast. When warnings are issued by a weather forecast office most radio stations use the following procedure: upon receipt of the warning message an announcement is made on 500 kHz (A1), 2182 kHz (A3), and 156.8 MHz, channels 16 (F3), followed by transmission of warning on the corresponding working frequencies. The warnings are broadcast again at the end of the first silent period following their receipt as well as at the end of the first silent period which occurs within the next radio watch hours of single-operator ships.

APPENDIX. In addition to an abridged explanation of synoptic and analysis codes, the appendix contains an explanation of abbreviations and contractions found in this publication, definitions of terms used

in weather broadcasts, a short explanation of symbols used on radiofacsimile charts, and a multilingual list of terms used in marine weather broadcasts.

There is an abbreviated section on ship codes for those who want to plot ships' weather observations in conjunction with an analysis. If this information is found to be too sketchy, one can obtain Federal Meteorological Handbook No. 2, Synoptic Code, which contains a complete explanation of the ship weather code, including all necessary tables. This publication is sold for \$1.50 by Superintendent of Documents, U.S. Government Printing Office, Washington, D.C. 20402.

NOTE

Comments, suggestions, or information from ships' officers relative to weather schedules listed in this publication are greatly appreciated. Letters should be addressed to National Weather Service, Silver Spring, Md. 20910 (attention W162). Tear sheets for this purpose are at the end of the book.

Section 1-Radiotelegraph

Serial No.	Station and abbreviation	Serial No.	Station and abbreviation
NORTH ATLANTIC OCEAN		0460..... Londonderry, No. Ireland (NST)	
0010.....	Norfolk, Va. (NAM)	0470.....	Reykjavik, Iceland (TFA)
0020.....	Halifax, N.S., Canada (CFH)	0475.....	Iceland (NRK)
0030.....	Frobisher Bay, N.W.T., Canada (VFF)	0480.....	Bergen, Norway (LMB)
0040.....	Resolution Is., N.W.T., Canada (VAW)	0490.....	Stockholm, Sweden (SAW, SMA)
0050.....	St. Anthony, Nfld., Canada (VCM)	0500.....	Helsinki, Finland (OHC)
0060.....	St. John's, Nfld., Canada (VON)	0510.....	Helsinki, Finland (OFB)
0070.....	Sydney, N.S., Canada (VCO)	0520.....	Kiel, Fed. Rep. of Germany (DAO)
0090.....	Fox River, Que., Canada (VCG)	0530.....	Norddeich, Fed. Rep. Ger. (DAN)
0100.....	Mont Joli, Que., Canada (VCF)	0540.....	Scheveningen, Neth. (PCH)
0110.....	Quebec, Que., Canada (VCC)	0550.....	Ponta Delgada, Azores (CTD)
0120.....	Montreal, Que., Canada (VFN)	0560.....	Monsanto, Portugal (CTV, CTU)
0130.....	Halifax, N.S., Canada (VCS)	0565.....	Rota, Spain (AOK)
0150.....	Boston, Mass. (NMF)	0570.....	Casablanca, Morocco (CNO)
0160.....	Boston, Mass. (NIK)	0580.....	Dakar, Senegal (6VA)
0170.....	Amagansett, N.Y. (WSL)	0590.....	Lome, Togo (5VA)
0180.....	New York, N.Y. (WSF)	MEDITERRANEAN SEA	
0190.....	Baltimore, Md. (WMH)	0610.....	Rome, Italy (IAR)
0200.....	Portsmouth, Va. (NMN)	0611.....	Rome, Italy (IDQ)
0210.....	Miami, Fla. (NMA)	0620.....	Tripoli, Libyan Arab Rep. (5AT)
0215.....	Key West, Fla. (NAR)	0630.....	Athens, Greece (SVA)
0220.....	Tampa, Fla. (WPD)	0635.....	Greece (NGR)
0230.....	Mobile, Ala. (WLO)	0640.....	Split, Yugoslavia (YUS)
0240.....	New Orleans, La. (NMG)	0650.....	Bandirma, Turkey (YMH)
0250.....	New Orleans, La. (WNU)	0660.....	Lattaquie, Syrian Arab Rep. (YKM)
0260.....	Galveston, Tex. (KLC)	0670.....	Haifa, Israel (4XO)
0270.....	San Juan, P.R. (NMR)	0680.....	Alexandria, Egypt (SUH)
0280.....	North Post, Trinidad (9YL)	SOUTH ATLANTIC OCEAN	
0290.....	Barbados (8PO)	0690.....	Rio de Janeiro, Brazil (PPR)
0300.....	Demerara, Guyana (8RB)	0709.....	Rio de Janeiro, Brazil (PWZ)
0310.....	Paramaribo, Surinam (PZN)	0701.....	Belem, Brazil (PPL)
0320.....	Curacao, Neth. Antilles (PJC)	0702.....	Juncao, Brazil (PPJ)
0330.....	Fort de France, Fr. Antilles (FFP)	0703.....	Olinda, Brazil (PPO)
0340.....	Bermuda (ZBM)	0710.....	Buenos Aires, Argentina (LPD)
0350.....	Godhavn Greenland (OZM)	0720.....	Comodore Rivadaria, Argentina (LPX)
0360.....	Angmagssalik, Greenland (OZL)	0730.....	Trewlew, Argentina (LPZ)
0370.....	Portishead, England (GKA)	0740.....	Luanda, Angola (XXV)
0385.....	Thurso, Scotland (GXH)	0750.....	Walvis Bay, So. Africa (ZSV)
0380.....	Stonehaven, Scotland (GNI)	0760.....	Cape Town, So. Africa (ZSC)
0390.....	Wick, Scotland (GKR)	NORTH PACIFIC OCEAN	
0400.....	Cullercoats, England (GCC)	0770.....	Pt. Reyes, Calif. (NMC)
0410.....	Niton, England (GNI)	0780.....	San Francisco, Calif. (KFS)
0420.....	Portpatrick, England (GPK)	0790.....	Los Angeles, Calif. (KOK)
0430.....	Lands End, England (GLD)	0810.....	Long Beach, Calif. (NMQ)
0440.....	Malin Head, Ireland (EJM)		
0450.....	Valentia, Ireland (EJK)		

SECTION 1

RADIOTELEGRAPH BROADCASTS

Explanatory Notes:

1. Unless otherwise noted, all broadcast times are Greenwich Mean Time (GMT), 24-hour clock (0000-2359).
2. All frequencies are A1 mode unless otherwise noted.
3. Contents are indicated as follows:
 - A - Analysis
 - F - Forecast
 - I - Ice report (shore ice)
 - IB - International iceberg bulletin
 - LR - Synoptic reports (land station)
 - P - Prognosis
 - S - Synopsis
 - SR - Synoptic reports (ship)
 - W - Warning
 - G - Gulfstream Analysis
4. If a broadcast part is encoded, the code is identified by a footnote.

NORTH ATLANTIC OCEAN

Radio station, area, and broadcast time	Frequency (kHz)	Contents	Radio station, area, and broadcast time	Frequency (kHz)	Contents
1-0010-1A			Area:		
NORFOLK, VA. (NAM)¹			Northeastern Canada coastal waters; Baffin Bay; Davis Strait; Labrador Sea		
Area:			0240, 1020	484	S, F
(a) No. Atlantic north of 03°N, west of 35°W, including Caribbean Sea and Gulf of Mex- ico			1320 2220		
0030, 1230		W, A	1-0050-1C		
	8090		ST. ANTHONY, NFLD., CANADA (VCM)		
	12135		Area: ¹		
	16180		Newfoundland coastal waters		
	20225 ²		0210, 1305,	489	S, F, IB
0630, 1900	do.	W, F	2100		
0500, 1700	do.	IB	1700	do.	F ²
Broadcast keyed from Londonderry NST			¹ See figure 2		
² 1200-0000 only			² For Labrador coast		
1-0020-1A			1-0060-1C		
HALIFAX, N.S. CANADA (CFH)¹			ST. JOHN'S, NFLD., CANADA (VON)		
Area:			Area: ¹		
North Atlantic			Newfoundland coastal waters; Grand Banks		
0100, 0700	438 ²	W, F	0150, 1200,	478	S, F
1300, 1900	4255		1630, 2130		
	6430		0000, 1330	do.	IB
	8697		¹ See figure 2		
	12726		1-0070-1BC		
	16926.5		SYDNEY, N.S., CANADA (VCO)		
0130 1330	do.	IB	Area: ¹		
0430, 1630	do.	A, W	Nova Scotia and Newfoundland waters.		
¹ Naval broadcast, schedules may change without prior notice			0100, 1300	464	I
² Off air 1200-1600 second Thur. each month			0430, 1220,	464	S, F
1-0030-1BC			2140		
FROBISHER BAY, N.W.T., CANADA (VFF)			¹ See figure 2		
Area: ¹			1-0090-1C		
Northeastern Canada coastal waters, Baffin Bay, Davis Strait, Labrador Sea			FOX RIVER, QUEBEC, CANADA (VCG)		
0200, 1100,	430	S, F, I	Area: ¹		
1400, 2300	4236.5		St. Lawrence River and Gulf		
	6493		0040, 1240	434	S, F, I
¹ See figure 1			1750	434	I
1-0040-1BC			¹ See figure 2		
RESOLUTION IS., N.W.T., CANADA (VAW)			1-0100-1C		
			MONT JOLI, QUEBEC, CANADA (VCF)		
			Area: ¹		
			St. Lawrence River and Gulf		

Radio station, area, and broadcast time	Frequency (kHz)	Contents	Radio station, area, and broadcast time	Frequency (kHz)	Contents
0030, 1230 1750	446 446	S, F F, I		13024.5 ³	
¹ See figure 2			¹ See figure 3		
1-0110-1C			² New York Harbor forecast at 1100 and 2300		
QUEBEC, QUEBEC, CANADA (VCC)			³ Frequency not used at 0500		
Area:			1-0180-1C		
St. Lawrence River			NEW YORK, N.Y., U.S.A. (WSF)		
0020, 1220, 1720	434	S, F ¹	Area: ¹		
¹ MAFOR Code FM 61 D			Coastal waters, Block Island, R.I. to Virginia Beach, Va.		
1-0120-1C			1405, 2205 ²	442	W, LR ³
MONTREAL, QUEBEC, CANADA (VFN)			¹ See figure 3		
Area:			² No broadcast on Sunday		
St. Lawrence River			³ Ambrose Light or Sandy Hook, N.J.		
0010, 1210, 1710	420	S, F ¹	1-0190-1C		
¹ MAFOR Code FM 61 D			BALTIMORE, MD., USA (WMH)		
1-0130-1 BC			Area: ¹		
HALIFAX, N.S., CANADA (VCS)			Coastal waters, Manasquan, N.J. to Virginia Beach, Va., including Chesapeake Bay.		
Area: ¹			0130, 1600	428	F, LR ²
Nova Scotia coastal and offshore waters.				4346	
1200, 2100	484	S, F		6351.5	
¹ See figure 2				8686	
1-0150-1BC				12952.9	
BOSTON, MASS., U.S.A. (NMF)			1330, 1930	do.	LR ³
Area: ¹			¹ See figure 3		
(a) Coastal waters, Eastport, Me. to Block Island, R.I.			² Observations from Atlantic City, Philadelphia, Baltimore, Norfolk, and Cape Hatteras		
(b) New England Waters			1-0200-1C		
0050, 1650	472	F	PORTSMOUTH, VA., U.S.A. (NMN)		
On receipt,	472	W	Area: ¹		
H+18 and			West Central North Atlantic		
H+48			0120, 1620	448	G, F
¹ See figure 3			On receipt,	448 ²	W
1-0160-1A			H+18 and		
BOSTON, MASS, U.S.A. (NIK)			H+48		
Area:			¹ See figure 3		
Western North Atlantic			² Preceded by announcement on 500kHz.		
0018	5320	IB	1-0210-1B		
	8502		MIAMI, FLA., U.S.A. (NMA)		
1218	8502	IB	Area: ¹		
	12750		Southwest North Atlantic, Jupiter Inlet to Dry Tortugas and coastal waters including Florida Straits		
1-0170-1B					
AMAGANSETT, N.Y., U.S.A. (WSL)					
Area: ¹					
West Central North Atlantic; New England waters; Southwest North Atlantic; E. Carib- bean Sea					
0500, 1100, 1700, 2300	418 8514	F ²			

Radio station, area, and broadcast time	Frequency (kHz)	Contents	Radio station, area, and broadcast time	Frequency (kHz)	Contents
On receipt and at end of first traffic period thereafter	422	W	1-0350-1BC		
1-0310-1B			GODHAVN, GREENLAND (OZM)		
PARAMARIBO, SURINAM (PZN)			Area: ¹		
Area:			Coastal waters, western Greenland		
05°N-15°N, 45°W-60°W			0150, 1350, 420	F	
0030, 1300	488	W, A, F	1950	5350	
1-0320-1B			¹ See figure 3a		
CURACAO, NETHERLANDS ANTILLES (PJC) ¹			1-0360-1BC		
Area:			ANGMAGSSALIK, GREENLAND (OZL)		
Caribbean Sea, North Atlantic South of 25°N and west of 45°W			Area: ¹		
0000	438	W ²	Coastal waters, eastern Greenland		
	6491.5		0105, 1305, 420	F	
2300	438	W ²	1905, 0705	420	
	4334			7570	
	6491.5		1600	420	I
	8694			7570	
				12105	
¹ Broadcasts July 15-November 14 only (Hurricane season)			¹ See figure 3a		
² Message "No hurricane warning" when no hurricanes affect the area.			1-0370-1A		
1-0330-1B			PORTISHEAD, ENGLAND (GKA)		
FORT DE FRANCE, FRENCH ANTILLES (FFP)			Area: ¹		
Area:			North Atlantic waters: 35°N-68°N 15°W-40°W		
Caribbean Sea; Atlantic Ocean: 10°N-20°N 50°W-70°W			0930	6369	W, S, F,
0100, 1300	4263	W ¹ , S ² ,		8546	SR ² , LR ³
	8675.2 ²	F, A	1130	12822	A ⁴
0300, 0530,	4263	W ¹		17098	
0930				22467	
0000, 0400,	8675.2	W ¹	2130	4286	W, S, F,
0830, 1330,				6369	SR ² , LR ³
1600, 2100				8546	
1145, 1500,	12831	W ¹		12822	
1730, 2000				17098	
On receipt,	435	W ¹	¹ See figure 4		
after first			² First 5 groups Code FM 21.E		
silence period			³ First 4 groups code FM11.E		
and at every			⁴ Code FM 46.D		
H thereafter			1-0380-1B		
¹ In French, repeated in English			STONEHAVEN, SCOTLAND (GND)		
² In French			Area: ¹		
³ Code FM46.D			Forth, Cromarty, Forties		
1-0340-1C			0830, 2030	458(A2)	F
BERMUDA (ZBM)			0818, 1218,	458(A2)	W
Area:			1618, 2018		
Bermuda local area			¹ See figure 4		
0118, 0518,	476(A2)	F	1-0385		
1318, 1718			THURSO, SCOTLAND (GXH)		
			Area: Same as NAM		
			0030	3724	W, A,
			0630, 1900		W, F
			Note: US Navy Weather Broadcast at intervening times for Eastern and North Atlantic and Mediterranean Sea.		

Radio station, area, and broadcast time	Frequency (kHz)	Contents	Radio station, area, and broadcast time	Frequency (kHz)	Contents
1-0390-1B			1-0450-1B		
WICK, SCOTLAND (GKR)			VALENTIA, IRELAND (EJK)		
<i>Area:</i> ¹			<i>Area:</i> ¹		
Southeast Iceland, Faeroes, Fair Isle, Hebrides, Viking, Cromarty			Shannon, Fastnet		
0848, 2048	432(A2)	F	0830, 2030	429(A2)	F
0818, 1218,	432(A2)	W	0818, 1218,	429(A2)	W
1618, 2018			1618, 2018		
¹ See figure 4			¹ See figure 4		
1-0400-1B			1-0460-1AB		
CULLERCOATS, ENGLAND (GCC)			1-0460		
<i>Area:</i> ¹			LONDONDERRY, NO. IRELAND (NST)		
Humber, German Bight, Thames, Dogger, Tyne, Fisher			<i>Area: Same as NAM</i>		
0848, 2048	484(A2)	F	0030, 1230	7504.5	W, A
0818, 1218,	484(A2)	W		12691 ¹	
1618, 2018			0630, 1900	do	W F
¹ See figure 4			0500 1700	do	I
1-0410-1B			¹ 0800-1900 only		
NITON, ENGLAND (GNI)			¹ Note: U.S. Navy Weather Broadcast at intervening times for Eastern and North Atlantic and Med. Sea.		
<i>Area:</i> ¹			1-0470-1BC		
Dover, Portland, Wight			REYKJAVIK, ICELAND (TFA)		
0830, 2030	464(A2)	F	<i>Area:</i>		
0818, 1218,	464(A2)	W	Coastal waters of Iceland, 63°N-67.5°N, 12°N- 27°W		
1618, 2018			0530, 1130,	276	I, S, F ¹
¹ See figure 4			1730, 2330		
1-0420-1B			¹ Entire broadcast in Icelandic, repeated in English		
PORTPATRICK, ENGLAND (GPK)			1-0475		
<i>Area:</i> ¹			REYKJAVIK, ICELAND (NRK)		
Irish Sea, Lundy			<i>Area: Same as NAM</i>		
0830, 2030	472(A2)	F	0030, 1230	5167	W, A
0818, 1218,	472(A2)	W	0630, 1900	do	W, F
1618, 2018			0500, 1700	do	I
¹ See figure 4			¹ Note: U.S. Navy Weather Broadcast at intervening times for Eastern and North Atlantic and Med Sea.		
1-0430-1B			1-0480-1A		
LANDS END, ENGLAND (GLD)			BERGEN, NORWAY (LMB)		
<i>Area:</i> ¹			<i>Area:</i>		
Lundy, Sole, Plymouth, Biscay, Finisterre			Southern part of Norwegian Sea, waters north and northeast of Iceland, Northeast Denmark Strait		
0848, 2048	438(A2)	F	1305	4532.5	W, S, F ¹
0818, 1218,	438(A2)	W		5780	
1618, 2018				7778.2	
¹ See figure 4				11165	
1-0440-1B			2240	3271	W, S, F ¹
MALIN HEAD, IRELAND (EJM)				4532.5 ²	
<i>Area:</i> ¹				5780	
Hebrides, Malin, Rockall, Bailey				7778.2	
0848, 2048	421(A2)	F		11165.2	
0818, 1218,	421(A2)	W			
1618, 2018					
¹ See figure 4			¹ Including shipping lanes east of 40°W.: Faeroe Is. to Cape Farewell, Shetland to Cape Race; Lands End to Cape Race.		

Radio station, area, and broadcast time	Frequency (kHz)	Contents	Radio station, area, and broadcast time	Frequency (kHz)	Contents
² Apr. 1-Sept. 30			1-0550-1A		
1-0490-1B			PONTA DELGADA, AZORES (CTD)		
STOCKHOLM, SWEDEN (SAW, SMA)			<i>Area:</i>		
<i>Area:</i>			Eastern No. Atlantic, 30°N-44°N, 20°W-40°W		
North Sea, Skagerrak, Kattegat, Baltic Sea, Gulf			0930	429	W ¹ , S ¹ , F ¹ ,
of Bothnia				7351	SR ² , LR ³
0848, 1148,	86.6	W, S, F, I ¹		10980	
2048	3195		2130	429	do.
	7732.5			3620	
				7351	
¹ Baltic Ice Code			¹ In Portuguese, repeated in English		
1-0500-1B			² Code FM21.E, FM22.E, FM23.E		
HELSINKI, FINLAND (OHC)			³ Code FM11.E		
<i>Area:</i>			1-0560-1B		
Gulf of Finland			MONSANTO, PORTUGAL (CTV, CTU)		
0825, 1933	519(A2)	F	<i>Area:</i>		
1-0510-1B			Atlantic Waters, 30°N-44°N, east of 20°W		
HELSINKI, FINLAND (OFB)			0800	418	W ¹ , S ¹ , F ¹ ,
<i>Area:</i>				6351.5	SR ² , LR ³
Gulf of Finland; Northern Baltic Sea; Gulf of				8526	
Bothnia				13002	
0918	3171	I ¹ , F		22551	
2118	5362	I ¹	2000	418	W ¹ , S ¹ , F ¹
¹ In Baltic Ice Code				4235	
1-0520-1BC				8526	
KIEL, FED. REPUBLIC OF GERMANY (DAO)				13002	
<i>Area:</i>				17055.2	
West Baltic Sea			0550, 1145,	418	A ⁴ , LR ³
0830, 2030	474	S, F	1745, 2345	5015	SR ²
On receipt,	474	W		7353	
H018 or H048				11015	
1-0530-1C			¹ In Portuguese, repeated in English		
NORDDEICH, FED. REPUBLIC OF GERMANY			² Code FM21.E, FM22.E, FM23.E		
(DAN)			³ Code FM11.E		
<i>Area:</i>			⁴ Code FM46.D		
German Bight, Northern Baltic Channel,			1-0565		
Western Baltic Sea			ROTA, SPAIN (AOK)		
0800, 1300,	474	S, F, I	<i>Area:</i>		
2000			Same as NAM		
1-0540-1C			0030, 1230	5917.5	W, A
SCHEVENINGEN, NETHERLANDS (PCH)				7705	
<i>Area:</i>			0630, 1900	do	W, F
North Sea,			0500, 1700	do	I
Netherlands Coastal Waters			Note: U.S. Navy Weather Broadcast at intervening times for		
0918, 1518,	421	W, S, F	Eastern and North Atlantic and Med Sea.		
2118			1-0570-1B		
On receipt,	461	W ¹	CASABLANCA, MOROCCO (CNO)		
H018 and			<i>Area:</i>		
H048			Atlantic waters, 25°N-40°N, east of 30°W		
¹ In English and Dutch			0835	5263	S ¹ , F ¹ , LR ²
				11010	
			1935	3232	do.
				5263	
			¹ In French		
			² Code FM11.E		

<i>Radio station, area, and broadcast time</i>	<i>Frequency (kHz)</i>	<i>Contents</i>	<i>Radio station, area, and broadcast time</i>	<i>Frequency (kHz)</i>	<i>Contents</i>
1-0580-1A			1-0590-1C		
DAKAR, SENEGAL (6VA)			LOME, TOGO (5VA)		
<i>Area:</i> ¹			<i>Area:</i>		
Atlantic Waters, Equator-25°N, 0°-35°W			Lome Roads		
1000, 2200	6386	S ² , F ² , F ³	0835	472	S ¹ , F ¹ , F ²
	8690			5265	
¹ See figure 3a			¹ In French		
² In French			² Code FM61.D(MAFOR)		
³ Code FM61.D(MAFOR)					

MEDITERRANEAN SEA

Radio station, area, and broadcast time	Frequency (kHz)	Contents	Radio station, area, and broadcast time	Frequency (kHz)	Contents
1-0610-2B			1-0635		
ROME, ITALY (IAR)			ATHENS, GREECE (NGR)		
<i>Area:</i> Central Mediterranean Sea, North of 35°N, 06°E-20°E			<i>Area:</i> Same as NAM		
0050, 1250	519	W ¹ , S ² , F ³ ,	0030, 1230	4623	W, A
	4292	LR ⁴		13372.5	
0050	4320		0630	do	W, F
0700, 1900	519	W ¹ , LR ⁴	0500, 1700	do	I
	4292		Note: U.S. Navy Weather Broadcast at intervening times for Eastern and North Atlantic and Med Sea.		
	8530		1-0640-2B		
¹ In Italian and English	13011		SPLIT, YUGOSLAVIA (YUS)		
² In Italian			<i>Area:</i> Adriatic Sea and Straits of Otranto		
³ Includes additional information for the Western and Eastern Mediterranean Sea.			0800, 1330,	484	W ¹ , S ¹ , F ¹
⁴ Code FM11.E			2000		
1-0611-2B			¹ In Serbo-Croat, repeated in English.		
ROME, ITALY (IDQ)¹			1-0650-2B		
<i>Area:</i> ² Mediterranean Sea			BANDIRMA, TURKEY (YMH)		
0500, 0830, ³	119	F	<i>Area:</i> ¹ Eastern Mediterranean Sea, Black Sea, Aegean Sea		
1800, 2100 ⁴	2291		0650, 1850	478	W ² , S ² , F ²
	4280			3636	
	6390.3			6965	
	8486		0450, 1710	3636	A ³
¹ Naval broadcast; schedules sometimes delayed				6965	
² See figure 5			1030, 2230	3636	P ^{3,4} , A ³
³ Rebroadcast of 0600 information				6965	
⁴ Rebroadcast of 1800 information			¹ See figure 5.		
1-0620-2B			² In Turkish, repeated in English.		
TRIPOLI, LIBYAN ARAB REPUBLIC (5AT)			³ Code FM 45.D		
<i>Area:</i> Mediterranean Sea south of 34°N, 10°E-25°E			⁴ Preceded by upper air prognoses which begin at 1030 GMT.		
0900, 1700	476 ¹	F ²	1-0660-2C		
0903, 1703	500	W ³	LATTAQUIE, SYRIAN ARAB REPUBLIC (YKM7)		
¹ After Preliminary call on 500 kHz			<i>Area:</i> Syrian Coast		
² In English			0900, 1700	432	F
³ In English and Arabic			1-0670-2B		
1-0630-2B			HAIFA, ISRAEL (4XO)		
ATHENS, GREECE (SVA)			<i>Area:</i> Mediterranean east of 25°E		
<i>Area:</i> Greek waters; Eastern Mediterranean 30°N- 43°N, 15°E-35°E					
0348, 0948,	418	W ¹ , S ² , F ²			
1548, 2148					
¹ In English, repeated in Greek					
² In English					

<i>Radio station, area, and broadcast time</i>	<i>Frequency (kHz)</i>	<i>Contents</i>	<i>Radio station, area, and broadcast time</i>	<i>Frequency (kHz)</i>	<i>Contents</i>
0800, 2000	484	F	ALEXANDRIA, EGYPT (SUH)		
On receipt:	484	W	<i>Area:</i> ¹		
0303, 1103,			Eastern Mediterranean		
1503, 2303			0100, 1300	444	F
Note: Special weather information may be requested on 500 kHz			On request	444	W
1-0680-2B			¹ See figure 6.		

SOUTH ATLANTIC OCEAN

Radio station, area, and broadcast time	Frequency (kHz)	Contents	Radio station, area, and broadcast time	Frequency (kHz)	Contents
1-0690-3A			0400	4265 8502 12979.5 17170	W ^{2,3} , A ^{2,3} , F ^{2,3}
RIO DE JANEIRO, BRAZIL (PPR)			2020	do.	do., plus A ^{3,4} , LR ⁵ , SR ⁶
Area: ¹					
07°N-36°S, west of 20°N					
0400, 1000	435 8634 4244 12687 22603	W ² , A ³ , F ²			
2020	do.	F ² , A ³ , LR ⁴ , SR ⁵			
0100, 0600,	435	S ²			
1000, 1200, 1500, 2100					
¹ See figure 7.					
² In Portuguese, repeated in English					
³ Code FM 46.D					
⁴ Code FM 11.E					
⁵ Code FM 23.E					
1-0700-3A			1-0702-3ABC		
RIO DE JANEIRO, BRAZIL (PWZ)			JUNCAO, BRAZIL (PPJ)		
Area: ¹			Area: ¹		
07°N-36°S, west of 20°W, Brazilian coastal waters			(a) Approaches to Juncao Harbor		
0030, 0630	4289 6435 8550 12754.5 17160 22530	W ² , F ²	(b) Atlantic coast from Uruguay to French Gui- ana		
1730	do.	W ² , F ² , A ³ , SR ⁴ , LR ⁵	(c) South Atlantic west of 20°W, 07°N-36°S		
¹ See figure 7.			0100, 0600,	480	S ²
² In Portuguese, repeated in English			1000, 1200 1500, 2100		
³ Code FM 46.D			0400	4251 8520 12840 17170	W ^{2,3} , A ^{2,3} , F ^{2,3}
⁴ Code FM 23.D			2020	do.	do., plus A ^{3,4} , LR ⁵ , SR ⁶
⁵ Code FM 11.E					
1-0701-3ABC			¹ See figure 7		
BELEM, BRAZIL (PPL)			² In Portuguese and English		
Area: ¹			³ For area C		
(a) Approaches to Belem Harbor			⁴ Code FM 46.D		
(b) Atlantic coast from Uruguay to French Gui- ana			⁵ Code FM 11.E		
(c) South Atlantic west of 20°W, 07°N-36°S			⁶ Code FM 23.E		
0100, 0600,	435	S ²	1-0703-3ABC		
1000, 1200 1500, 2100			OLINDA, BRAZIL (PPO)		
			Area: ¹		
			(a) Approaches to Recife Harbor		
			(b) Atlantic coast from Uruguay to French Gui- ana		
			(c) South Atlantic west of 20°W, 07°N-36°S		
			0100, 0600,	480	S ²
			1000, 1200, 1500, 2100		
			0400	4298 8520 12840	W ^{2,3} , A ^{2,3} , F ^{2,3}

Radio station, area, and broadcast time	Frequency (kHz)	Contents	Radio station, area, and broadcast time	Frequency (kHz)	Contents
2020	17162 do.	do., plus A ^{3,4} , LR ⁵ , SR ⁶	Rio de la Plata, Atlantic Zone of Argentina and Coasts of Uruguay and Brazil (Southern Part)	1730 527	W ² , S ² , F ²
¹ See figure 7			¹ See figure 7.		
² In Portuguese and English			² In Spanish, repeated in English.		
³ For area C					
⁴ Code FM 46.D					
⁵ Code FM 11.E					
⁶ Code FM 23.E					
1-0710-3B			1-0750-3B		
BUENOS AIRES, ARGENTINA (LPD)			WALVIS BAY, SOUTH AFRICA (ZSV)		
Area: ¹			Area: ¹		
Rio de la Plata, Atlantic Zone of Argentina; coastal waters of Uruguay and southern Brazil			Coastal waters, (50 miles seaward) Cunene River-Orange River		
0118, 1600	524 4262 12763	W ² , S ² , F ²	0950, 1650	519(A2)	W, F
¹ See figure 7.			1350	519	LR
² In Spanish, repeated in English at 0130 and 1615.			¹ See figure 9.		
1-0720-3B			1-0760-3A		
COMODORO RIVADAVIA, ARGENTINA (LPX)			CAPE TOWN, SOUTH AFRICA (ZSC)		
Area: ¹			Area: ¹		
Rio de la Plata, Atlantic Zone of Argentina; coastal waters of Uruguay and southern Brazil			(a) Atlantic waters south of Equator, 20°W- 20°E; south of 25°S, 20°E-70°E (b) Coastal waters, (50 Miles Seaward) Orange River- East London		
0400, 1800	474	W ² , S ² , F ²	0930, 1730	4291 6423 8461 12724 17018 22455	W ² , S ² , F ² A ³
¹ See figure 7.			0930, 1730	418	W ⁴ , F ⁴
² In Spanish, repeated in English.			1348	418 22455	LR
1-0730-3B			¹ See figure 9.		
TREWLEW, ARGENTINA (LPZ)			² For area (a)		
Area: ¹			³ Code FM 46.D		
			⁴ For area (b)		

NORTH PACIFIC OCEAN

Radio station, area, and broadcast time	Frequency (kHz)	Contents	Radio station, area, and broadcast time	Frequency (kHz)	Contents
1-0770-4ABC			1-0810-4AC		
PT. REYES, CALIF. (NMC)			LONG BEACH, CALIF. (NMQ)		
Area: ¹			Area: ¹		
(a) North Pacific; Equator-30°N, east of 140°W			(a) Equator northward, east of 160°E (b)		
(b) North Pacific; north of 30°N, east of			Coastal waters, areas 5 and 6		
160°E (c) Coastal waters, areas 3 and 4					
0030, 0630,	4346 ¹ 8682	S ² , F ²	0420, 1720	472	W ² , S ² , F ³
1900, 2100	12730		H018 or H048	472	W ²
	17151.2 ⁵				
0330, 1700	420	W ³ , S ³ , F ³			
¹ See figure 12					
² For areas a and b					
³ For area c					
⁴ Use only at 0630					
⁵ Not used at 0630					
1-0780-4ABC			1-0830-4B		
SAN FRANCISCO, CALIF. (KFS)			GALVESTON, TEXAS (KLC)		
Area: ¹			Area:		
(a) Equator-30°N, east of 140°W (b) North of			Equator-30°N, east of 140°W		
30°N, east of 160°E (c) Coastal waters,			On receipt and		
areas 3 and 4			odd H030		
0420, 1620,	436	W ² , S ² , F ²		484	W ¹
2300	8713.5			4256 ²	
	12695.5			6369	
	17184.8			8666	
	22515			13038 ³	
2200	do.	W ³ , F ³		17208.8 ³	
¹ See figure 12					
² For areas a and b					
³ For area c					
1-0790-4AC			¹ Also included are warnings for Gulf of Mexico and Caribbean Sea		
LOS ANGELES, CALIF. (KOK)			² Nighttime only		
Area: ¹			³ Daytime only		
(a) Equator northward, east of 160°E (b)			1-0860-4B		
Coastal waters, area 5			KODIAK, ALASKA (NOJ)		
0450, 1650	464	W ² , F ² ,	Area: ¹		
	6463.5 ³	LR ⁴	Gulf of Alaska; coastal waters-Areas 2, 3, 4, 5, 6		
	8590		0630, 1930		
	12933		470		
	17064.8 ⁵		S, F		
Even H050	do.	W ⁶	0530 1730		
			1-0870-4C		
¹ See figure 12			VANCOUVER, B.C. CANADA (CKN)		
² For area b			Area: ¹		
³ Nighttime only			British Columbia coastal waters		
⁴ Los Angeles Harbor Light			0000 0430		
⁵ Daytime only			110.75		
⁶ For area b			1330		
			4307		
			6445.25		
			8614		
			12921		
			17228		
			¹ See figure 11.		
			1-0880-4C		
			VANCOUVER, B.C., CANADA (VAI)		
			Area: ¹		
			British Columbia coastal waters: Strait of Juan		

Radio station, area, and broadcast time	Frequency (kHz)	Contents	Radio station, area, and broadcast time	Frequency (kHz)	Contents
de Fuca, Strait of Georgia			1-0930-4ABC		
0130, 0530	4235	A ²	HONOLULU, HAWAII (NMO)		
1730	6351.5		<i>Area:</i>		
	8453		(a) Hawaiian waters out 20 miles from Islands.		
	12876		(b) Offshore waters within 1000 miles of Hawaiian Islands		
	17175.2		(c) North Pacific; Equator-50°N, 160°E-140°W		
¹ See figure 11.			(d) South Pacific; Equator-25°S, 160°E-110°W		
² Code FM46.D			0500, 2100	440	W ² , F ²
1-0890-4C			H018 or H048	440	W
PRINCE RUPERT, B.C., CANADA (VAJ)			0100, 0400	4525	W ³ , F ³
<i>Area:</i> ¹			0700 2000	9050	
Coastal waters of British Columbia: Hecate Strait, Dixon Entrance, Queen Charlotte Sound, west coast Queen Charlotte Is.				13655	
0430, 1630,	420	S, F		16457.5	
1930				22472	
¹ See figure 11			² For areas a and b		
1-0900-4c			³ For areas c and d		
BULL HARBOR, B.C., CANADA (VAG)			1-0945		
<i>Area:</i> ¹			GUAM, MARIANAS IS. (NRV)		
Coastal waters, 48.5°N-52°N			<i>Area:</i>		
0445, 1540	484	S, F	Local Waters		
1940			0000, 0800	466	F
¹ See figure 11			1-0950-4A		
1-0910-4C			GUAM, MARIANAS IS. (NPN)¹		
TOFINO, B.C., CANADA (VAE)			<i>Area:</i>		
<i>Area:</i> ¹			(a) Tropical waters No. and So. Hemispheres, 62°E-180° (b) No. Pacific and Indian Ocean, Equator-Asian mainland, 62°E-160°E (c) No. Pacific, Equator-25°N, 130°E-180°		
Coastal waters of British Columbia			0400, 1300,		W ² , F ³
0350, 1335	478	S, F	1700, 2300	4955	
1445, 1950				8150	
¹ See figure 11				13380	
1-0920-4C				16445 ⁴	
ASTORIA, ORE. (NMW)				17530	
<i>Area:</i> ¹				21760	
Coastal waters, areas 1 and 2, plus Strait Of Juan de Fuca and inland waters of western Washington			¹ Naval Weather Service broadcast, identical to San Miguel, Philippines (NPO) and Yokusuka, Japan (NDT) transmissions.		
0430, 1700	448	S, F, LR	² For areas a and b		
¹ See figure 12			³ For area c		
			⁴ Used only by NDT		
			1-0951-4A		
			YOKUSUKU, JAPAN (NDT)		
			Note: All broadcast details are identical to those shown for Guam (NPN) listed immediately preceding, except the radio frequencies. The frequency, 16445 kHz, is used by Yokusuka.		

Radio station, area, and broadcast time	Frequency (kHz)	Contents	Radio station, area, and broadcast time	Frequency (kHz)	Contents
1-0960-4A			1-1000-4B		
TOKYO, JAPAN (JMC)			KUSHIRO, JAPAN (JNX)		
<i>Area:</i> (a) Equator-60°N, 100°E-180° (b) Equator-60°N, 95°E-175°W (c) 20°N-50°N, 120°E-140°E			<i>Area:</i> ¹ Japanese coastal waters: Hakodate		
0318, 0918,	122.65	W ¹ , S ¹	1055, 2255	444(A2)	LR, F
1518, 2118	4298		¹ See figure 13		
	6397		1-1010-4B		
	8526 ²		MAIZURU, JAPAN (JNC)		
	12840		<i>Area:</i> ¹ Japanese coastal waters: Maizuru		
	17029 ³		0055, 0825	464(A2)	S ² , F ²
0548, 1148,	do.	W ⁴	2135	464(A2)	F ²
1748, 2348			¹ See figure 13		
0448, 1048,	do.	A ⁵	² In English and Japanese		
1648, 2248			1-1020-4B		
0200, 0800,	do.	LR ⁶	MOJI, JAPAN (JNR)		
1400, 2000			<i>Area:</i> ¹ Japanese coastal waters: Fukuoka		
0218, 0818,	do.	LR ⁷	0925, 2125	444(A2)	F
1418, 2018		SR ⁸	¹ See figure 13		
0248, 0848,	do.	LR ⁹	1-1030-4B		
1448, 2048		SR ¹⁰	NAGOYA, JAPAN (JNT)		
¹ For area a			<i>Area:</i> ¹ Japanese coastal waters: Nagoya		
² 0945-1815			0125, 1050	464(A2)	LR, F
³ 1815-0945			¹ See figure 13		
⁴ For area c, English and Japanese			1-1040-4B		
⁵ For area b			NIIGATA, JAPAN (JNV)		
⁶ Japan reports, Code FM11.E			<i>Area:</i> ¹ Japanese coastal waters: Niigata		
⁷ Korea, China, Hong Kong reports, code FM11.E			0720, 1250,	472(A2)	LR, F
⁸ Code FM21.E, 23.E			2225		
⁹ China, Siberia, Pacific Islands, Alaska, Philippines reports, Code FM11.E			¹ See figure 13		
1-0970-4B			1-1050-4B		
HAKODATE, JAPAN (JNI)			OTARU, JAPAN (JNL)		
<i>Area:</i> ¹ Japanese coastal waters: Hakodate			<i>Area:</i> ¹ Japanese coastal waters: Sapporo		
0325, 0925,	472(A2)	LR, F	0100, 1030,	472(A2)	LR, F
2125			2235		
¹ See figure 13			¹ See figure 13		
1-0980-4B			1-1060-4B		
KAGOSHIMA, JAPAN (JNJ)			SAKAI, JAPAN (JNP)		
<i>Area:</i> ¹ Japanese coastal waters: Kagoshima			<i>Area:</i> ¹ Japanese coastal waters: Maizuru		
0950, 2250	478(A2)	F ²	0150, 0850,	464(A2)	S ² , F ²
¹ See figure 13			2205		
² In English and Japanese			¹ See figure 13		
1-0990-4B			² In English and Japanese		
KOBE, JAPAN (JGD)					
<i>Area:</i> ¹ Japanese coastal waters: Kobe					
0055, 1325	472(A2)	S, LR, F			
¹ See figure 13					

Radio station, area, and broadcast time	Frequency (kHz)	Contents	Radio station, area, and broadcast time	Frequency (kHz)	Contents
1-1070-4B			0120	474	F, W
SASEBO, JAPAN (JNK)				6446	
<i>Area:</i> ¹				8568	
Japanese coastal waters: Nagasaki				12852	
0935, 2235	444(A2)	F ²		17136	
¹ See figure 13			¹ See figure 14		
² In Japanese and English			1-1130-4B		
1-1080-4B			MANILA, PHILIPINES (DZG)		
SHIOGAMA, JAPAN (JNN)			<i>Area:</i> ¹		
<i>Area:</i> ¹			05°N-25°N, 15°E-135°E		
Japanese coastal waters: Sendai			0320, 1520	483	F, W
0030, 0625	464(A2)	F ²		6441	
¹ See figure 13				8588	
² In English and Japanese				12882	
1-1090-4AB				17176	
VLADIVOSTOK, U.S.S.R. (UIK, UFL)				22502	
<i>Area:</i>			¹ See figure 14		
Sea of Japan; NW Pacific, 34°N-51°N, west of			1-1140-4B		
180°			MANILA, PHILIPPINES (DZO)		
0530, 2130	142.86	S ¹ , F ¹ , I ¹	<i>Area:</i> ¹		
	2605		05°N-25°N, 15°E-135°E		
	6379.5		1030, 2330	518	F
¹ In Russian, repeated in MAFOR Code (FM61.D) or in En-				4290	
glish				6435	
1-1100-4B				8580	
PETROPAVLAVSK, U.S.S.R. (UBE)				12870	
<i>Area:</i>				17170	
Sea of Okhotsk, Bering Sea, Pacific in Vicinity			¹ See figure 14		
of Kamchatka			1-1150-4B		
0500, 0900 ¹ ,	450	S ² , F ² , I ²	MANILA, PHILIPPINES (DZN)		
2000	3310 ³		<i>Area:</i> ¹		
	6370		05°N-25°N, 15°E-135°E		
	13020 ⁴		0200, 1400	447	F
¹ Repetition of the 0500 broadcast				4314	
² In Russian, repeated in MAFOR Code (FM61.D) or in En-				6468	
glish				8684	
³ Frequency not used at 0500				12906	
⁴ Frequency not used at 0900 or 2000				17208	
1-1110-4B			¹ See figure 14		
SEOUL, SO. KOREA (HLL)			1-1160-4A		
<i>Area:</i> ¹			SAN MIGUEL, PHILIPPINES (NPO) ¹		
East Sea, Yellow Sea, Cheju, Chusan, Nagasaki,			<i>Area:</i>		
Kagoshima			(a) Tropical Waters, 62°E-180°		
0000, 1200	5810	W ² , S ² , F ²	(b) Equator- Asian mainland, 62°E-160°E		
	11620		(c) Equator-25°N, 130°E-180°		
¹ See figure 13			0400, 1300,	4445	W ² , F ³
² In English and MAFOR Code (FM61.D)			1700, 2300	10440.5	
1-1120-4B				12200	
MANILA, PHILIPPINES (DZR)			¹ Naval Weather Service broadcast, identical to Guam (NPN)		
<i>Area:</i> ¹			transmission		
05°N-25°N, 15°E-135°E			² For areas a and b		
			³ For area c		

Radio station, area, and broadcast time	Frequency (kHz)	Contents	Radio station, area, and broadcast time	Frequency (kHz)	Contents
1-1170-4B			1-1200-4B		
HONG KONG, (VPS)			TAIPEI, TAIWAN (BMB)		
Area: ¹			Area:		
China Sea north of 10°N; Gulf of Tonkin; coastal waters, Hainan Is.- Shanghai; waters east of Taiwan to Ryukyus			(a) 10°N-40°N, 90°E-150°E		
0118, 1318,	527.5	W, S, F,	(b) 10°N-30°N, 105°E-140°E		
	435	LR ² , SR ³	(c) East China Sea, South China Sea ⁵		
	3842		0400, 1000,	5909	A ¹ , W ³ , F
	6371 ⁴		1600, 2200	8117 ³	
	8539			13560 ⁴	
	13020		¹ For area a		
	17096 ⁵		² For area b		
0430	527.5	A ⁶	³ Frequency not used at 0400 and 1000		
	435		⁴ Frequency not used at 1600 and 2200		
	8539		⁵ See figure 13		
	13020		1-1210-4B		
	17096		KAO-HSIUNG, TAIWAN (XSW)		
0818;	do.	W	Area: ¹		
On receipt			East China Sea, South China Sea		
and H018			1100, 2300	460	F, W
¹ See figure 13				8582	
² Code FM 11.E			¹ See figure 13		
³ Code FM 21.E, 22.E, 23.E			1-1220-4B		
⁴ 1000-2400			KEELUNG, TAIWAN (XSX)		
⁵ 0000-1300			Area:		
⁶ Code FM 46.D, for area 05°N-45°N, 95°E-150°E			East China Sea, South China Sea ¹		
1-1180-4B			1030, 2230	420	F, W
DALIAN, PEOPLES' REPUBLIC OF CHINA				8714	
(XSZ)			¹ See figure 13		
Area: ¹			1-1240-4B		
North and central Huanghai Sea and Bohai Sea			SINGAPORE (9VG)		
0050, 1250	462	W ² , F ³	Area: ¹		
	6502		Malacca Straits, Andaman Sea, South China Sea		
	8694		0120, 1320	516	W, S, F
¹ See figure 13a				4322	
² Warning of winds Force 7 or greater				6412	
³ In Chinese and English			¹ See figure 13		
1-1190-4B			1-1250-4B		
SHANGHAI, PEOPLES REPUBLIC OF CHINA			BANGKOK, THAILAND (HSA, HSJ)		
(XSG)			Area: ¹		
Area: ¹			Gulf of Thailand, Strait of Malacca, South China		
Bohai Sea, Huanghai Sea, Shanghai Port,			Sea		
Taiwan Straits and Waters around Taiwan			0150	512	W, LR ²
0306, 0906	458	W ² , F ³ ,		7955	
	6414.5	S	0750	do.	W, S ³ ,
	8502				F ⁴ , LR ²
	12871.5		¹ See figure 15		
¹ See figure 13a			² Code FM 11.E		
² Tropical storm and typhoon warnings			³ For Equator-30°N, 90°E-120°E		
³ In Chinese and English			⁴ For areas 1, 2, 3, 4, 5		

SOUTH PACIFIC OCEAN

Radio station, area, and broadcast time	Frequency (kHz)	Contents	Radio station, area, and broadcast time	Frequency (kHz)	Contents
1-1260-5BC			0155, 1800	450	F
1-1253			1-1290-5B		
GUAM, MARIANAS, IS. (NPN)			PAPEETE, TAHITI (FXP)		
<i>See 1-0950 for broadcast information to South Pacific Ocean.</i>			<i>Area:</i> ¹		
1-1254			05°S-30°S, 130°W-160°W		
HONOLULU, HAWAII (KHK)			0400	7320	W ² , S ² , A ³ , F ²
<i>See 1-0921 for broadcast information to South Pacific Ocean.</i>				16040	
1-1255			¹ See figure 17		
HONOLULU, HAWAII (NMO)			² In French		
<i>See 1-0930 for broadcast information to South Pacific Ocean.</i>			³ Code FM 46.D		
SANTIAGO, CHILE (CAK)			1-1300-5C		
<i>Area:</i> ¹			PAGO PAGO, SAMOA (KUQ)		
Chilean territory and coastal waters; Antarctic waters			<i>Area:</i>		
0130, 1330,	3787.5	F ²	Samoa and Tokelau Islands		
2000	6745.5		0400, 2000	8585	F
	13600		1-1310-5BC		
	18013		SUVA, FIJI IS. (3DP)		
¹ See figure 16			<i>Area:</i>		
² In Spanish			(a) Equator-25°S, 160°E-140°W		
1-1270-5C			(b) Fijian coastal waters		
VALPARAISO, CHILE (CCV)			0005, 0830	518(A2)	W ¹ , F ²
<i>Area:</i> ¹			On receipt,	518(A2)	W ³
⁴ Chilean coastal waters			H018		
1430, 2030	2841	F ²	¹ For area a		
	4271		² For area b		
	8558		³ Preceded by announcement on 500 kHz		
	12960		1-1320-5B		
	18175		NOUMEA, NEW CALEDONIA (FJP)		
¹ See figure 16			<i>Area:</i> ¹		
² In Spanish			Waters off New Caledonia and New Hebrides, extending 300 mi. seawards.		
1-1280-5C			0000	8698	W ² , F ² , A ³
PITCAIRN IS. (ZBP)			0030	416.5	do.
<i>Area:</i>			0900	8698	W ² , F ² , S ²
Local waters			0930	416.5	do.
			¹ See figure 18		
			² In French		
			³ Code FM 46.D.		
			For area: Equator-45°S, 130°E-170°W		
			1-1330-5A		
			WELLINGTON, NEW ZEALAND (ZLZ, ZLX)		
			<i>Area:</i>		
			(a) Equator-50°S, 160°E-140°W		
			(b) 20°S-55°S, 140°E-140°W		

<i>Radio station, area, and broadcast time</i>	<i>Frequency (kHz)</i>	<i>Contents</i>	<i>Radio station, area, and broadcast time</i>	<i>Frequency (kHz)</i>	<i>Contents</i>
0048	472(A1A2)	F	On receipt and	445(A2)	W
On receipt and	472(A2)	W	even H+18		
even H+18	6502(A2)		1-1420-5B		
1-1390-5B			RABAU, NEW BRITAIN (VJZ)		
TOWNSVILLE, AUSTRALIA (VIT)			<i>Area:</i>		
<i>Area:</i>			Papua, New Guinea waters: Equator-14°S,		
09°S-20°S, 142°E-160°E			141°E-160°E		
0030, 0930,	420.5	F, LR, SR	0000, 0900	430	F, LR, SR
0930, 2348				6351.5	
	6463.5(A2)		On receipt and	430	W
On receipt and	420.5(A2)	W	even H+18		
even H+18			1-1430-5B		
1-1400-5B			PORT MORESBY, PAPUA (VIG)		
THURSDAY IS., AUSTRALIA (VII)			<i>Area:</i>		
<i>Area:</i>			Papua, New Guinea waters: Equator-14°S,		
Queensland waters, 142°E-160°E, Equator-coast,			141°E-160°E		
125°E-142°E			0048, 0530	484	F, LR, SR
0018, 0948	6502(A2)	F		6351.5	
On receipt and	488.5(A2)	W	On receipt and	484(A2)	W
even H+18			even H+18		
1-1410-5B			1-1440-5B		
DARWIN, AUSTRALIA (VID)			JAKARTA, INDONESIA (8BB)		
<i>Area:</i>			<i>Area:</i>		
Equator to Coast, 125°E-42°E			Indonesian Waters.		
0048, 1048	445	F, LR, SR	0830	11500	W ¹ , S ¹ , F ¹
	6463.5			16200	

¹ In Indonesian and English

INDIAN OCEAN, RED SEA, AND PERSIAN GULF

Radio station, area, and broadcast time	Frequency (kHz)	Contents	Radio station, area, and broadcast time	Frequency (kHz)	Contents
1-1450-6A			1-1520-6A		
CAPE TOWN, SO. AFRICA (ZSC)			TAMATAVE, MADAGASCAR (5RS)		
See 1-0760			<i>Area:</i> ¹		
1-1460-6BC			05°S.-30°S, Coast-70°E, except area west of		
CAPE TOWN, SO. AFRICA (ZSC5)			45°E between 15°S and 30°S		
<i>Area:</i> ¹			0000 ² , 0400 ² , 476 ³	W ⁴	
Coastal Waters 50 mi. Seaward Between Orange			0800 ² , 1200 ² , 519 ³		
River And East London; Area Cape West			2000 ²		
0930, 1730	418(A2)	W, F	0510, 0810	8734	LR ⁵ , S ⁵ , F ⁵
¹ See figure 9			¹ See Figure 21		
1-1470-6BC			² Repeated at H010; broadcast only if a special marine		
DURBAN, SO. AFRICA (ZSD)			weather bulletin is issued for area.		
<i>Area:</i> ¹			³ After Preliminary call on 500 kHz.		
Coastal waters 50 mi. seaward between Agulhas			⁴ In French		
and Lourenco Marques; Mozambique Chan-			⁵ Code FM 11.E (1st 4 groups)		
nel; area Durban East.			1-1530-6A		
0950, 1705	432	W, F	VACOAS, MAURITIUS (3BA)		
	4242.5		<i>Area:</i> ¹		
	8576.5		Southwest Indian Ocean, approximately 10°S-		
1248	432	LR	30°S, 50°E-85°E		
¹ See figure 9			0148, 1348	500 (A2)	W ² , S ² , F ² , LR ³ , SR ⁴
1-1480-6BC			0448	500(A2)	do., plus A ⁵
PORT ELIZABETH, SO. AFRICA (ZSQ4)			0748 ⁶ , 1648 ⁶ , 500(A2)		W, LR ³ , SR ⁴
<i>Area:</i> ¹			2048 ⁶		
Coastal waters 50 Mi. seaward between Agulhas			¹ See figure 20		
and Lourenco Marques; area Cape East			² For areas D35 to D70, E80 and E90		
0920, 1720	472	W, F	³ Code FM 11.E		
1320	472	LR	⁴ code FM 21.E, 22.E, 23.E		
¹ See figure 9			⁵ Code FM 46.D; area, equator-40°S, 40°E-80°E		
1-1500-6C			⁶ Only when a tropical storm affects areas D35 to D70.		
BEIRA, PORTUGUESE EAST AFRICA (CRX 3)			1-1545		
<i>Area:</i> ¹			MAURITIUS (3BM)		
Coastal waters, 10°S-27°S, 50 mi. seaward			<i>Area:</i>		
0835, 1135, 515		W ¹ , S ¹ , F ¹	10°N to 40°S, African coast to 100°E.		
2020			0130, 0430	6351.5 ²	W, F, S
¹ In Portuguese, repeated in English.			0900, 1330 ¹	12988.5	
1-1510-6C			1630, 2030 ¹	16978.4 ³	
PORTO AMELIA, PORTUGUESE EAST AFRICA			¹ Used only during cyclones.		
(CRX 4)			² H24		
<i>Area:</i>			³ 0600-1400		
Coastal waters, 10°S-27°S, 50 mi. seaward			1-1550-6A		
0835, 1135, 487		W ¹ , S ¹ , F ¹	NAIROBI, KENYA (5YE)		
2020			<i>Area:</i> ¹		
¹ In Portuguese, repeated in English			12°N-11°S, Coast to 60°E		
			1200	9043	W, S, F,
				17365	SR ² , LR

Radio station, area, and broadcast time	Frequency (kHz)	Contents	Radio station, area, and broadcast time	Frequency (kHz)	Contents
¹ See figure 22			1-1620-6C		
² Code FM 21.E, 22.E, 23E			KUWAIT (9KK)		
³ Code FM 11.E			<i>Area:</i>		
1-1560-6A			Coastal waters of Kuwait		
MOMBASA, KENYA (5ZF)			0530, 1730, 450	F	
<i>Area:</i>			on request 8525		
12°N-25°S, west of 65°E			12895		
0418, 0818, 500	W				
1218, 1618			1-1630-6B		
1-1570-6B			BASRAH, IRAQ (YIR)		
DJIBOUTI, FRENCH TERRITORY OF THE			<i>Area:</i>		
AFARS AND ISSA (TXZ)			North Persian Gulf		
<i>Area:</i> ¹			0530, 1330, 440	F	
Indian Ocean north of 10°S and west of 60°E;			on request 6493.25		
Red Sea, Gulf of Aden			8668		
0430, 0900 464	F ²		1-1640-6B		
8682			KARACHI, PAKISTAN (ASK)		
1500 8682	A ³		<i>Area:</i>		
1700 ⁴ 464	F ²		Arabian Sea north of 20°N, Gulf of Oman, Per-		
8682			sian Gulf		
¹ See figure 20			0830 484	F	
² For areas A-00, 05, 10, 15, 20, 25; In French repeated in			13024		
English			1630 484	F	
³ Code FM 46.D			8694		
⁴ Repeat of 0900 broadcast			0030, 0430, 500	W ¹	
1-1580-6B			1230, 2030		
MASSAWA, ETHIOPIA (ETV)			¹ Broadcast only on development of a tropical storm		
<i>Area:</i>			1-1650-6BC		
Red Sea			BOMBAY, INDIA (VWB)		
0500 455	S, F		<i>Area:</i> ¹		
1-1590-6B			(a) Arabian Sea, north of 05°N, east of 60°E,		
PORT SUDAN, SUDAN (STP)			except area north of 20°N and west of 68°E		
<i>Area:</i>			(b) South Gujarat Coast And North Maharash-		
Red Sea 18°N-23°N			tra Coast		
0810 500	F		0650 476	SR ² , LR ³	
1-1600-6B			8514		
KOSSEIR, EGYPT (SUK)			0848, 1648 476	W ⁴ , S ⁴ , F ⁴	
<i>Area:</i>			8514	A ⁵	
Red Sea north of 23°N			0048, 0448, 500	W ⁴	
1230 429(A2)	W, F		1248, 2048 8514		
1-1610-6B			0120, 0520, 476	S ⁶ , F ⁶	
RA'S TANNURAH, SAUDI ARABIA (HZY)			0920, 1320,		
<i>Area:</i>			1720, 2120		
Persian Gulf, Gulf of 'Oman, Dhahran			¹ See figure 23		
0430 430	F, LR		² Code FM 21.E		
8480			³ Code FM 11.E		
1630 430	F, LR		⁴ For area a		
12811.3			⁵ Code FM 46.D		
On request 16960	F, LR		⁶ For area b; broadcast only in event of a tropical storm hav-		
			ing developed.		
Note: Ships are requested to furnish observations to this sta-			1-1660-6B		
tion to assist in preparation of forecasts.			COLOMBO, SRI LANKA (4PB)		
			<i>Area:</i>		
			(a) 10°N-05°S, 60°E-95°E		

Radio station, area, and broadcast time	Frequency (kHz)	Contents	Radio station, area, and broadcast time	Frequency (kHz)	Contents
(b) 05°S-15°S, 70°E-95°E 0530, 0600, 1330	482(A2) 8473(A2)	F	0900, 1700 0500 ² , 1300 ² , 2100 ²	440 440	S, F S, F
1-1670-6B			¹ See figure 23. ² In the event of a cyclonic storm having developed.		
MADRAS, INDIA (VWM)			1-1700-6C		
<i>Area:</i> ¹			RATNAGIRI, INDIA (VWP)		
(a) Bay of Bengal			<i>Area:</i> ¹		
(b) North Tamil Nadu and South Andhra Coast, 75 km seaward.			Maharashtra coasts, North and South Goa Coasts, 75 km seaward.		
0918, 1718	485 8674	W ² , S ² , F ²	0900, 1700	420.5	S, F
0118, 0518, 1318, 2118	500 8674	W ^{2,3}	0500 ² , 1300 ² , 2100 ²	420.5	S, F
0100, 0500, 0900, 1300, 1700, 2100	485	S ^{3,4} , F ^{3,4}	¹ See figure 23. ² In the event of a cyclonic storm having developed.		
¹ See figure 23. ² For area a ³ Broadcast in the event of disturbed weather ⁴ For area b			1-1710-6C		
1-1680-6BC			GOA, INDIA (VWG)		
CALCUTTA, INDIA (VWC)			<i>Area:</i> ¹		
<i>Area:</i> ¹			South Maharashtra, Goa, and Karnataka coasts, 75 km seaward		
(a) Bay of Bengal except area bounded by 18°N, 94.5°E; 18°N, 92°E; 13.5°N, 92°E; 13.5°N, 94°E; 10°N, 94°E; 10°N, 95°E; 05°N, 95°E			0920, 1720	417.5	S, F
(b) Orissa coast and west Bengal Coast, 75 km seaward			0520 ² , 1320 ² , 2120 ²	417.5	S, F
0630	434 12745	SR ² , LR ³	¹ See figure 23. ² In the event of a cyclonic storm having developed.		
0818 ⁴	do.	W ⁵ , S ⁵ , F ⁵ , A ⁶	1-1720-6C		
1520	434 8526	SR ² , LR ³	MANGALORE, INDIA (VWL)		
1618 ⁴	434 4286	W ⁵ , S ⁵ , F ⁵ , A ⁶	<i>Area:</i> ¹		
0018, 0418, 1218, 2018	500	W ⁷	Karnataka coast and North Kerala coast, 75 km seaward		
0100, 0500, 0900, 1700, 2100	434	S ⁸ , F ⁸	0900, 0920, 1700, 1720	438	S, F
¹ See figure 23. ² Code FM 21.E ³ Code FM 11.E ⁴ 3-minute interval for time signal 0827-0830, 1627-1630 ⁵ For area a ⁶ Code FM 46.D ⁷ Broadcast only in event of a tropical storm having developed. ⁸ Broadcast only in event of disturbed weather, for area b			0500 ² , 0520 ² , 1300 ² , 1320 ² , 2100 ² , 2120 ²	438	S, F
1-1690-6C			¹ See figure 23. ² In The event of a cyclonic storm having developed		
KANDLA, INDIA (VWK)			1-1730-6C		
<i>Area:</i> ¹			COCHIN, INDIA (VWN)		
North Gujarat coast, 75 km seaward			<i>Area:</i> ¹		
			North and South Kerala coast, 75 km seaward		
			0900, 1700	460	S, F
			0500 ² , 1300 ² , 2100 ²	460	S, F
			¹ See figure 23. ² In The event of a cyclonic storm having developed		
			1-1740-6C		
			TUTICORIN, INDIA (VWT)		
			<i>Area:</i> ¹		
			South Tamil Nadu coast, 75 km seaward		

Radio station, area, and broadcast time	Frequency (kHz)	Contents	Radio station, area, and broadcast time	Frequency (kHz)	Contents
0920, 1720	487	S, F	(b) 25°S-50°S, 100°E-129°E		
0520 ² , 1320 ² , 2120 ²	487	S, F	0100, 1200	8598	F ²
¹ See figure 23.			On receipt and even H+18	8598(A2)	W ²
² In the event of a cyclonic storm having developed.			0100, 1300	484	F ³ , LR, SR
1-1750-6C			On receipt and even H+18	484	W ³
VISHAKHAPATNAM, INDIA (VWV)			¹ See figure 19		
<i>Area:</i> ¹			² For area a		
North and South Andhra coast, 75 km seaward			³ For area b		
0920, 1720	474	S, F	1-1790-6B		
0520 ² , 1320 ² , 2120 ²	474	S, F	BROOME, AUSTRALIA (VIO)		
¹ See figure 23			<i>Area:</i>		
² In the event of a cyclonic storm having developed.			Northwest Australian waters, 10°S-25°S, 300 miles seawards		
1-1760-6C			0118, 1230	440	F, LR, LS
PORT BLAIR, INDIA (VWP)				6407.5	
<i>Area:</i> ¹			On receipt and even H+18	440(A2)	W
Andaman- Nicobar coasts, 75 km. seaward			¹ Frequency not used at 1248.		
0900, 1700	442	S, F	1-1800-6B		
0500 ² , 1300 ² , 2100 ²	442	S, F	ESPERANCE, AUSTRALIA (VIE)		
¹ See figure 23.			<i>Area:</i>		
² In the event of a cyclonic storm having developed.			Southwest of Australia, 30°S-45°S, 100°S-129°E		
1-1770-6B			0048 1148	6407.5(A2)	F
RANGOON, BURMA (XYR)			On receipt and even H+18 ¹	435(A2)	W
<i>Area:</i>			¹ Only during hours 0000-1200 and 2300-2400		
Bay of Bengal, except area west of 92°E and south of 10°N			1-1820-6A		
0900, 1700	460	W, S, F	NEW AMSTERDAM IS. (FJY4)		
	8710		<i>Area:</i>		
0100, 0500, 1300, 2100	500	W ¹	South of 30°S, 60°E-90°E		
¹ Broadcast only in the event of bad weather			0245, 0545	510	LR ¹ , W ² ,
1-1780-6A				8690	
PERTH, AUSTRALIA (VIP)			1015	do.	S ² , F ² , A ³
<i>Area:</i> ¹			¹ Code FM 11.E; reports from New Amsterdam Is. and Ker- guelen Is.		
(a) 10°S-50°S, 95°E-129°E			² French and English		
			³ Code FM 46.D		

ANTARCTIC

<i>Radio station, area, and broadcast time</i>	<i>Frequency (kHz)</i>	<i>Contents</i>	<i>Radio station, area, and broadcast time</i>	<i>Frequency (kHz)</i>	<i>Contents</i>
1-1830-7A				8195 ³	
ORCADAS, SO. ORKNEY IS. (LOK)				9983 ²	
<i>Area:</i> ¹				11147 ³	
Drake Passage; Bellingshausen and Weddell Seas					¹ See figure 24.
1625	2422.5 ²	W, S, F			² In winter
	6454 ²				³ In summer

Section 2-Radiotelephone

Serial No.	Station and abbreviation	Serial No.	Station and abbreviation
NORTH ATLANTIC OCEAN			
0010.....	Fort Collins, Colo. (WWV)	0460.....	Galveston, Tex. (KQP)
0020.....	Ocean Gate, N.J. (WOO)	0470.....	Corpus Christi, Tex. (KCC)
0031.....	Portsmouth, Va. (NMN)	0475.....	Aransas, Tex. (NOY-3)
0040.....	Frobisher Bay, N.W.T., Canada (VFF)	0480.....	Port Isabel, Tex. (NCH)
0050.....	Resolution Is., N.W.T., Canada (VAW)	0490.....	Swan Island (WSG)
0060.....	Goose Bay, Lab., Canada (VFZ)	0500.....	Nassau, Bahamas (C6N)
0070.....	Cartwright, Lab., Canada (VOK)	0510.....	San Juan, Puerto Rico (NMR)
0080.....	St. Anthony, Nfld., Canada (VCM)	0530.....	Destrellan, French Antilles (FFQ)
0090.....	St. John's, Nfld., Canada (VON)	0540.....	Fort-de-France, Fr. Antilles (FFP)
0100.....	Comfort Cove, Nfld., Canada (VOO)	0550.....	North Post, Trinidad (9YL)
0110.....	St. Lawrence, Nfld., Canada (VCP)	0560.....	Willemstad, Curacao (PJC)
0120.....	Sydney, N.S., Canada (VCO)	0570.....	Paramaribo, Surinam (PZN)
0130.....	Canso, N.S., Canada (VAX)	0580.....	Bermuda (ZBM)
0140.....	Stephenville, Nfld., Canada (VOJ)	0590.....	Julianhab, Greenland (OXF)
0150.....	Charlottetown, P.E.I., Canada (VCA)	0600.....	Holsteinsborg, Greenland (OYS)
0160.....	Grindstone, Magdalen Is., Canada (VCN)	0610.....	Upernavik, Greenland (OYN)
0170.....	Fox River, Que., Canada (VCG)	0620.....	Angmagssalik, Greenland (OZL)
0180.....	Mont Joli, Que., Canada (VCF)	0630.....	Reykjavik, Iceland (TFA)
0190.....	Quebec, Que., Canada (VCC)	0640.....	Valentia, Ireland (EJK)
0200.....	Montreal, Que., Canada (VFN)	0650.....	Oban, Scotland (GNE)
0210.....	Halifax, N.S., Canada (VCS)	0660.....	Wick, Scotland (GKR)
0220.....	Yarmouth, N.S., Canada (VAU)	0670.....	Stonehaven, Scotland (GND)
0230.....	Saint John, N.B., Canada (VAR)	0680.....	Cullercoats, England (GCC)
0240.....	Boston, Mass. (WOU)	0690.....	Humber, England (GKZ)
0241.....	Boston, Mass. (NMF)	0700.....	North Foreland, Eng. (GNF)
0250.....	Shinnecock, N.Y. (NMY-41)	0710.....	Niton, England (GNI)
0260.....	New York, N.Y. (WOX)	0720.....	Lands End, England (GLD)
0261.....	Ocean Gate, N.J. (WAQ)	0730.....	Ilfracombe, England (GIL)
0270.....	Cape May, N.J. (NMK)	0740.....	Portpatrick, Scotland (GPK)
0280.....	Baltimore, Md. (NMX)	0750.....	Rorvik, Norway (LGD)
0300.....	Norfolk, Va. (WGB)	0760.....	Orlandet, Norway (LFO)
0320.....	Fort Macon, N.C. (NMN-37)	0770.....	Alesund, Norway (LGA)
0330.....	Charleston, S.C. (NMB)	0780.....	Floro, Norway (LGL)
0340.....	Charleston, S.C. (WJO)	0790.....	Bergen, Norway (LGN)
0350.....	Mayport, Fla. (NMA-10)	0800.....	Rogaland, Norway (LGO)
0360.....	Jacksonville, Fla. (WNJ)	0810.....	Farsund, Norway (LGZ)
0370.....	Miami (Ojus), Fla. (WOM)	0820.....	Oslo, Norway (LGO)
0380.....	Miami, Fla. (NCF)	0830.....	Goteborg, Sweden (SAG)
0390.....	Miami, Fla. (WDR)	0840.....	Karlskrona, Sweden (SAA)
0391.....	Key West, Fla. (NOK)	0850.....	Stockholm, Sweden (SDJ)
0400.....	Tampa, Fla. (WFA)	0860.....	Tingstade, Sweden (SAE)
0410.....	St. Petersburg, Fla. (NOF)	0870.....	Harnosand, Sweden (SAH)
0420.....	Mobile, Ala. (WLO)	0880.....	Mariehamn, Finland (OFH)
0430.....	New Orleans, La. (NMG)	0890.....	Helsinki, Finland (OHG)
0440.....	New Orleans, La. (WAK)	0900.....	Gdynia, Poland (SPH)
0445.....	Grand Isle, La. (NMG-15)	0910.....	Rugen, German Dem. Republic (DHS)
0450.....	Galveston, Tex. (NOY)	0920.....	Kiel, Fed. Republic of Germany (DAO)
		0930.....	Ronne, Denmark (OYE)
		0940.....	Lyngby, Denmark (OXZ)

Serial No.	Station and abbreviation	Serial No.	Station and abbreviation
0950.....	Skagen, Denmark (OXP)	1340.....	Spring Is., B.C., Canada (VAE2)
0960.....	Blaavand, Denmark (OXB)	1350.....	Tofino, B.C., Canada (VAE)
0970.....	Norddeich, Fed. Republic of Germany (DAN)	1360.....	Comox, B.C., Canada (VAC)
0980.....	Scheveningen, Netherlands (PCH)	1370.....	Vancouver, B.C., Canada (VAI)
0990.....	Oostende, Belgium (OSU)	1380.....	Victoria, B.C., Canada (VAK)
1000.....	Brest/LeConquet, France (FFU)	1390.....	Port Angeles, Wash. (NOW)
1010.....	Saint-Nazaire, France (FFO)	1400.....	Seattle, Wash. (KOW)
MEDITERRANEAN SEA.		1410.....	Seattle, Wash. (NMW43)
1020.....	Valencia, Spain	1420.....	Astoria, Ore. (NMW)
1030.....	Grasse, France (TKM)	1430.....	Astoria, Ore. (KFX)
1040.....	Marseilles, France (FFM)	1450.....	Coos Bay Ore. (KTJ)
1050.....	Tripoli, Libyan Arab Republic (5AT)	1451.....	Coos Bay Ore. (NOE)
1060.....	Athens, Greece (SVA)	1460.....	Eureka, Calif. (KOE)
1070.....	Bar, Yugoslavia	1470.....	Humboldt Bay, Calif. (NMC11)
1080.....	Split, Yugoslavia	1480.....	San Francisco, Calif. (KLH)
1090.....	Rijeka, Yugoslavia	1481.....	Monterey, Calif. (NMC-6)
1100.....	Haifa, Israel (4XO)	1490.....	Long Beach, Calif. (NMQ)
SOUTH ATLANTIC OCEAN		1500.....	San Pedro, Calif. (KOU)
1110.....	Cape Town, South Africa (ZSC30)	1510.....	LaJolla, Calif. (WWD)
1120.....	Walvis Bay, South Africa (ZSV4)	1520.....	Honolulu, Hawaii (KOM)
1130.....	South African Broadcast Corp.	1530.....	Honolulu, Hawaii (NMO)
NORTH PACIFIC OCEAN		1540.....	Honolulu, Hawaii (KBP)
1140.....	Fort Collins, Colo. (WWV)	1541.....	Guam, Marianas Is. (NRV)
1150.....	Kekaha, Hawaii (WWVH)	SOUTH PACIFIC OCEAN	
1160.....	San Francisco, Calif. (NMC)	1545.....	Kekaha, Hawaii (WWVH)
1170.....	San Francisco, Calif. (KMI)	1547.....	Honolulu, Hawaii (KOM)
1181.....	Adak, Alaska (NMJ21)	1550.....	Mahina, Tahiti
1190.....	Attu, Alaska (NMJ22)	1560.....	Suva, Fiji Islands (3DP)
1200.....	Cape Sarichef, Alaska (NRW)	1570.....	Noumea, New Caledonia
1210.....	Cold Bay, Alaska (KCI95)	1580.....	Auckland, New Zealand (ZLD)
1220.....	King Salmon, Alaska (KCI98)	1590.....	Awarua, New Zealand (ZLB)
1230.....	Kodiak, Alaska (NOJ)	1600.....	Chatham Is., New Zealand (ZLC)
1231.....	Kodiak, Alaska (WBH-29)	1610.....	Wellington, New Zealand (ZLW)
1240.....	Yakutat, Alaska (KGD91)	1620.....	Adelaide, Australia (VIA)
1250.....	Ocean Cape, Alaska (NMJ19)	1630.....	Melbourne, Australia (VIM)
1255.....	Mud Bay, Alaska (WRN-43)	1640.....	Sydney, Australia (VIS)
1260.....	Juneau, Alaska (KCI97)	1650.....	Brisbane, Australia (VIB)
1261.....	Juneau, Alaska (NMJ 1)	1660.....	Townsville, Australia (VIT)
1262.....	Juneau, Alaska (WGG58)	1670.....	Thursday Is., Australia (VII)
1270.....	Biorka Is., Alaska (NMJ18)	1680.....	Darwin, Australia (VID)
1271.....	Petersburg, Alaska (WRN-42)	1690.....	Port Moresby, Papua (VIG)
1272.....	Lena Point, Alaska (WRN-40)	1700.....	Rabaul, New Britain (VJZ)
1279.....	Ketchikan, Alaska (WRN-41)	INDIAN OCEAN, RED SEA AND PERSIAN GULF	
1280.....	Ketchikan, Alaska (NMJ)	1710.....	Cape Town, South Africa (ZSC30)
1281.....	Ketchikan, Alaska (WGG56)	1720.....	Port Elizabeth, South Africa (ZSQ7)
1285.....	Sitka, Alaska (WDU-29)	1730.....	Durban, South Africa (ZSD)
1290.....	Annette, Alaska (KGD58)	1740.....	Port Louis Harbor, Mauritius (3BB)
1300.....	Prince Rupert, B.C., Canada (VAJ)	1750.....	Nairobi, Kenya (5YE)
1310.....	Sandspit, B.C., Canada (VAH)	1760.....	Jazirat Das (2AI15)
1320.....	Bull Harbor, B.C., Canada (VAG)	1770.....	Al Kuwait (9KK)
1330.....	Alert Bay, B.C., Canada (VAF)	1780.....	Broome, Australia (VIO)
		1790.....	Carnarvon, Australia (VIC)
		1800.....	Esperance, Australia (VIE)

SECTION 2

RADIOTELEPHONE BROADCASTS

Explanatory Notes:

1. Unless otherwise noted, all broadcasts are Greenwich Mean Time (GMT), 24-hour clock (0000-2359). Frequencies listed are carrier frequencies.
2. Emission Classification is shown in parentheses immediately following the frequency. Following is a table of symbols used:

Amplitude Modulation

- A3 - Double sideband
- A3A- Single sideband, reduced carrier
- A3H- Single sideband, full carrier
- A3J - Single sideband, suppressed carrier

Frequency Modulation

F3

3. Contents are indicated as follows:

- A - Analysis
- F - Forecast
- I - Ice report (shore ice)
- IB - International iceberg bulletin
- LR - Synoptic reports (land station)
- P - Prognosis
- S - Synopsis
- SR - Synoptic reports (ship)
- W - Warning
- G - Gulfstream Analysis

5. If a broadcast part is encoded, the code is identified by a footnote.

Radio station, area, and broadcast time	Frequency and mode	Contents	Radio station, area, and broadcast time	Frequency and mode	Contents
0050, 1205 ¹ See figure 2	2598(A3)	S, F	2-0140-1C		
2-0080-1C			STEPHENVILLE, NFLD., CANADA (VOJ)		
ST. ANTHONY, NFLD., CANADA (VCM)			<i>Area:</i> ¹		
<i>Area:</i> ¹			Newfoundland coastal waters (West Coast)		
Newfoundland and Labrador coastal waters			0150, 1103, 2598(A3H)	S, F	
0110, 0905, 2598(A3H)	S, F, IB ²		1703, 2205 161.65MHz(F3)		
1745, 2005 161.65MHz(F3)			<i>See figure 2</i>		
¹ See figure 2			2-0150-1C		
² Reports of iceberg sightings, at 0110 & 0905 only			CHARLOTTETOWN, P.E.I., CANADA (VCA)		
2-0090-1C			<i>Area:</i> ¹		
ST. JOHN'S, NFLD., CANADA (VON)			Prince Edward Is. coastal waters		
<i>Area:</i> ¹			0210, 1040, 161.65MHz(F3)	S, F	
Newfoundland coastal waters, Grand Banks			1805, 2205		
0050, 0850, 2598(A3H)	S, F, I		¹ See figure 2		
1640, 2020 161.65MHz(F3)			2-0160-1C		
<i>See figure 2</i>			GRINDSTONE, MAGDALEN IS., CANADA (VCN)		
2-0100-1BC			<i>Area:</i> ¹		
COMFORT COVE, NFLD., CANADA (VOO)			Gulf of St. Lawrence		
<i>Area:</i> ¹			0410, 0920, 2598(A3H)	S, F	
Newfoundland coastal waters and Northern Grand Banks			1735, 2215 161.65MHz(F3)		
0010, 0803 2598(A3H)	S, F		¹ See Figure 2		
1720, 1945 161.65MHz(F3)			2-0170-1C		
¹ See figure 2			FOX RIVER, QUEBEC, CANADA (VCG)		
2-0110-1BC			<i>Area:</i> ¹		
ST. LAWRENCE, NFLD., CANADA (VCP)			Gulf of St. Lawrence, Lower St. Lawrence River		
<i>Area:</i> ¹			0030, 1230, 2598(A3)	S, F ² , I	
Newfoundland coastal waters and Grand Banks			1740 2582(A3)		
0320, 0945, 2598(A3H)	S, F		161.9(F3)		
1610, 2120 161.65MHz(F3)			¹ See figure 2		
¹ See figure 2			² Coded forecast, MAFOR 61.D		
2-0120-1C			2-0180-1C		
SYDNEY, N.S., CANADA (VCO)			MONT JOLI, QUEBEC, CANADA (VCF)		
<i>Area:</i> ¹			<i>Area:</i> ¹		
Nova Scotia and Newfoundland coastal waters			Lower and Middle St. Lawrence River		
0040, 0310, 2598(A3H)	S, F		0205, 0805 2514(A3H)	F ²	
1650, 2050, 2140			1405, 2005 161.9(F3)		
0100, 1300 do.	I		0020, 1220 do	S, F, I	
¹ See figure 2			1735		
2-0130-1C			0020, 1220, do	S, F ³ , I	
CANSO, N.S., CANADA (VAX)			1730		
<i>Area:</i>			¹ See figure 2		
Nova Scotia coastal waters			² St. Lawrence Weather Bulletin		
0345, 0820, 2598(A3H)	S, F		³ Coded forecast, MAFOR 61.D		
1620, 2145 161.65MHz(F3)			2-0190-1C		
¹ See figure 2			QUEBEC, QUEBEC, CANADA (VCC)		
			<i>Area:</i>		
			St. Lawrence River		
			0010, 1210, 2582(A3)	S, F ¹	
			1710		
			¹ Coded forecast, MAFOR 61.D		

Radio station, area, and broadcast time	Frequency and mode	Contents	Radio station, area, and broadcast time	Frequency and mode	Contents
2-0200-1C			2-0241-1B		
MONTREAL, QUEBEC, CANADA (VFN)			BOSTON, MASS., U.S.A. (NMF)		
<i>Area:</i> ¹			<i>Area:</i> ¹		
St. Lawrence River			New England Waters: north of 41°N west of 60°W		
0020, 1220,	2582(A3)	S, F ¹ , I, water	0440, 1040	2670(A3J)	F
1720	161.9(F3)		2240		
¹ Coded forecast, MAFOR 61.D			1640 and	2670(A3J)	W
			on receipt	157.1MHz(F3)	
2-0210-1BC			2-0250-1C		
HALIFAX, N.S., CANADA (VCS)			SHINNECOCK, N.Y., U.S.A. (NMY-41)		
<i>Area:</i> ¹			<i>Area:</i> ¹		
Nova Scotia coastal and offshore waters			Coastal waters-Block Island, R.I. to Manasquan, NJ		
0303, 0745,	2598(A3H)	S, F	0020, 0920,	2670(A3J)	F
1550, 2110	161.65MHz(F3)		1220, 1520,		
0205, 0805,	4431.8		1820, 2120		
1605, 2205	8770		On receipt;	2670(A3J)	W
	13154.5		0020, 1220		
¹ See figure 2			¹ See figure 3		
			² During boating season, May 15-Oct. 15		
2-0220-1C			2-0260-1BC		
YARMOUTH, N.S., CANADA (VAU)			NEW YORK, N.Y., U.S.A. (WOX)		
<i>Area:</i> ¹			<i>Area:</i> ¹		
(a) Nova Scotia coastal waters			(a) Offshore waters: 32°N-41°N, west of 65°W		
(b) U.S. coastal waters, Eastport, Maine-Merrimack River			(b) Coastal waters-Block Island, R.I. to Virginia Beach, Va.		
0220, 0910,	2598(A3H)	S, F	0015 ² , 1215 ² ,	2482(A3H) ³	F
1710, 2010			1715 ²	2522(A3H)	
¹ See figure 2				2590(A3H)	
2-0230-1C			¹ See figure 3		
SAINT JOHN, N.B., CANADA (VAR)			² Broadcast 1 hour earlier during Daylight Saving Time		
<i>Area:</i>			³ Used daytime only		
Bay of Fundy and Nova Scotia coastal waters			2-0261-1C		
0210, 0810,	2598(A3H)	S, F	OCEAN GATE, N.J., U.S.A. (WAQ)		
1540, 2120	161.65MHz(F3)		<i>Area:</i> ¹		
2-0240-1BC			(a) Offshore waters: 32°N-41°N, west of 65°W		
BOSTON, MASS., U.S.A. (WOU)			West Central North Atlantic		
<i>Area:</i> ¹			(b) Coastal waters-Block Island, R.I. to Virginia Beach, Va.		
(a) New England Waters: North of 41°N, west of 60°W			0015, 1215	2558(A3H)	F
(b) Offshore waters: 32°N-41°N, west of 65°W			On receipt;	2558(A3H)	W
(c) Coastal waters-Eastport, Me. to Block Island, R.I.			even H+15		
(d) Boston Harbor			¹ See figure 3		
0420, 1020	2450(A3H)	F	2-0270-1C		
	2506(A3H)		CAPE MAY, N.J., U.S.A. (NMK)		
	2566(A3H)		<i>Area:</i> ¹		
1120, 1620,	do.	F ³	(a) Coastal waters-Manasquan, N.J. to Virginia Beach, Va.		
2220			(b) Delaware Bay		
			1100, 2300	2670(A3J)	F
			0945 ² ,	2670(A3J)	F
			1545 ² ,	157.1	

Radio station, area, and broadcast time	Frequency and mode	Contents	Radio station, area, and broadcast time	Frequency and mode	Contents	
1845 ² , 2145 ² On receipt	2670(A3J) 157.1(F3)	W	0015, 1215 On receipt and odd H thereafter	2566(A3H) 2566(A3H)	F W	
¹ See figure 3 ² During boating season, May 15-Oct. 15						
2-0280-1BC BALTIMORE, MD., U.S.A. (NMX) Area: (a) Offshore Waters: 32°N-41°N, west of 65°W (b) Lower Potomac River and Chesapeake Bay	1750 2670(A3J) On receipt 2670(A3J) 157.1MHz(F3)	F W	2-0350-1C MAYPORT, FLA., U.S.A. (NMA-10) Area: Coastal waters-Savannah, Ga. to Jupiter Inlet, Fla.	0620, 1820, 1110, 1710, 2210, 1410 On receipt	2670(A3J) 157.1MHz(F3)	F, LR ¹ F W
2-0300-1BC NORFOLK, VA., U.S.A. (WGB) Area: ¹ (a) Offshore waters: 32°N-41°N, west of 65°W (b) Coastal waters-Cape Henlopen, N.J. to Savannah, Ga., including Chesapeake Bay; Lower Potomac River; Hampton Roads; Al- bemarle And Pamlico Sounds.	0500 ² , 1100 ² , 2450(A3H) ³ 1700 ² , 2300 2538(A3H) On receipt do.	F W	¹ Reports from Jacksonville, Melbourne, Fla. and Savannah			
¹ See figure 3 ² Broadcast 1 hour earlier during Daylight Saving Time ³ Used daytime only			2-0360-1C JACKSONVILLE, FLA., U.S.A. (WNJ) Area: Coastal waters-Savannah, Ga. to Jupiter Inlet, Fla.	0000, 1200 On receipt and even H	2566(A3H) 2566(A3)	F W
2-0320-1BC FORT MACON, N.C., U.S.A. (NMN-37) Area: ¹ (a) Offshore waters: 32°N-41°N, west of 65°W (b) Coastal waters-Cape Henlopen, N.J. to Savannah, Ga.	1130, 1700 2670(A3J) On receipt 2670(A3J) 157.1MHz(F3)	F W	2-0370-1B MIAMI (OJUS), FLA., U.S.A. (WOM) Area: ¹ (a) Caribbean Sea (b) Southwestern No. Atlantic (c) Gulf of Mexico	0430, 1230 0530, 1130	4428.6(A3J) 8792.8(A3J) 13137(A3J) 17325(A3J) 22688.5(A3J) 4422.2(A3J) 8796(A3J) 13140.5(A3J) 17286.5(A3J) 22692(A3J)	F F
¹ See figure 3			¹ See figure 3 Note: A frequency will not be used if other traffic is in progress at broadcast time.			
2-0330-1C CHARLESTON, S.C., U.S.A. (NMB) Area: Coastal waters-Cape Fear, N.C. to St. Augustine, Fla.	0420, 1620 2670(A3J) 1100, 1700, 157.1MHz(F3) 2200 On receipt 2670(A3J) 157.1MHz(F3)	F F W	2-0380-1C MIAMI BEACH, FLA., U.S.A. (NCF) Area: ¹ (a) Coastal waters-Jupiter Inlet, Fla. to Dry Tortugas, including Florida Straits (b) Offshore waters: Southwest North Atlantic	0350, 1550	2670(A3J)	F
2-0340-1C CHARLESTON, S.C., U.S.A. (WJO) Area: Coastal waters-Cape Fear, N.C. to Savannah, Ga.						

Radio station, area, and broadcast time	Frequency and mode	Contents	Radio station, area, and broadcast time	Frequency and mode	Contents
1130, 1730 2230, 1330 On receipt	157.1MHz(F3) 2670(A3J) 157.1MHz(F3)	F ² W	2-0420-IBC MOBILE, ALA., U.S.A. (WLO) Area: ¹		
¹ See figure 3 ² For area a			(a) Offshore waters-Gulf of Mexico; Caribbean Sea; Southwestern No. Atlantic		
2-0390-IBC			(b) Coastal waters-Florida Straits to Brownsville, Tex.		
MIAMI, FLA., U.S.A. (WDR)			0500 ² , 1100 ² , 2572(A3H) 1700 ² , 2300 162.00 MHz(F3)	F	
Area: ¹					
Coastal waters-Ponce de Leon to Tarpon Springs, Fla.					
0015, 1215 ²	2442(A3H) ² 2490(A3H) 2514(A3H) ²	F			
¹ See figure 3 ² Broadcast 1 hour earlier during Daylight Saving Time ³ Used during daytime only					
2-0391-1C					
KEY WEST, FLA., U.S.A. (NOK)			2-0430-IBC		
Area: ¹			NEW ORLEANS, LA., U.S.A. (NMG)		
Coastal waters-Jupiter Inlet to Dry Tortugas, including Florida Straits; Cape Sable to Tarpon Springs, including Florida Bay			Area: ¹		
1100, 1700, 157.1MHz(F3) 2200		F	(a) Offshore waters-Middle Gulf of Mexico;		
2-0400-IBC			(b) Coastal waters-Biloxi, Miss. to Port Arthur Tex.		
TAMPA, FLA., U.S.A. (WFA)/KUZ 385			1030, 1230, 2670(A3J) 1630, 2230	F	
Area: ¹			1050, 1650, 157.1 MHz(F3) 2250,	F	
(a) East Gulf of Mexico			On receipt 2670(A3J)	W	
(b) Coastal waters-Florida Straits to Apalachicola, Fla.			¹ See figure 3		
0000 ² , 1200 ²	2466(A3H) 2550(A3H) 161.8MHz(F3)	F	2-0440-IBC		
On receipt and odd H	do.	W	NEW ORLEANS, LA., U.S.A.(WAK)		
¹ See figure 3 ² Broadcast 1 hour earlier during Daylight Saving Time			Area: ¹		
2-0410-IBC			(a) Offshore waters-Gulf of Mexico, Caribbean Sea		
ST. PETERSBURG, FLA., U.S.A. (NMA-21)			(b) Coastal waters-Apalachicola, Fla. to Port Arthur, Tex.		
Area: ¹			0500 ² , 1400 ²	2482(A3H) 2598(A3H) 4419(A3H)	F
(a) East Gulf of Mexico			On receipt and on odd H	do.	W
(b) Coastal waters Key Largo to Aplachicola, Fla. including Florida Straits			¹ See figure 3 ² Broadcast 1 hour earlier during Daylight Saving Time		
0320 2670(A3J) 1420		W F	2-0445		
			GRAND ISLE, LA. U.S.A. (NMG-15)		
			Area:		
			Costal Waters, Biloxi, Miss to Morgan City, La.		
			1045, 1645 157.1MHz(F3) 2245	F	
			2-0450-IBC		
			GALVESTON TEX., U.S.A.(NOY)		
			Area: ¹		
			(a) Offshore waters-Middle and Western Gulf of Mexico		
2250, 1450 157.1(F3) 2250		F			
¹ See figure 3					

<i>Radio station, area, and broadcast time</i>	<i>Frequency and mode</i>	<i>Contents</i>	<i>Radio station, area, and broadcast time</i>	<i>Frequency and mode</i>	<i>Contents</i>
(b) Coastal waters-Morgan City, La. to Brownsville, Tex. 1050, 1250, 2670(A3J) 1650, 2250 On receipt 2670(A3J) ¹ See figure 3	F W		1705 and on request ¹ Swan Island report	2738(A3)	F, LR ¹
2-0460-1BC GALVESTON, TEX., U.S.A.(KQP) <i>Area:</i> ¹ (a) Offshore waters-Middle and Western Gulf of Mexico (b) Coastal waters-Morgan City, La. to Brownsville, Tex. 0600 ² , 1800 ² 2450(A3H) 2530(A3H) On receipt and odd H015 do. W ¹ See figure 3 ² Broadcast 1 hour earlier during Daylight Saving Time	F W		2-0500-1BC NASSAU, BAHAMAS(C6N) <i>Area:</i> All Bahamas and Adjacent Waters H000 ¹ 2558(A3) W ² ¹ Local Time ² Hurricane warnings		
2-0470-1BC CORPUS CHRISTI, TEX., U.S.A.(KCC) <i>Area:</i> ¹ Western Caribbean Sea; Gulf of Mexico; Coastal waters-Morgan City to Brownsville, Tex. 0000, 1200 2538(A3H) F On receipt 2538(A3) W ¹ See figure 3	F W		2-0510-1BC SAN JUAN, PUERTO RICO (NMR) <i>Area:</i> Eastern Caribbean Sea including Puerto Rico, Virgin Islands and Adjacent Waters 0305, 1505 2670(A3J) F On receipt 2670(A3J) W 1110, 1710 157.1MHz(F3) F 2210		
2-0475 PORT ARANSAS, TEX. U.S.A. (NOY-3) <i>Area:</i> Port Arthur, Tex to Brownsville, Tex. 1040 1645 157.1MHz(F3) F 2245	F		2-0530-1B DESTRELLAN, FRENCH ANTILLES (FFQ) <i>Area:</i> Caribbean Sea and Atlantic Ocean 10°N-20°N, 50°W-70°W On receipt 2255(A3) ¹ W ² (1200-2400) ¹ Preceded by announcement on 2182 kHz ² In French, repeated in English		
2-0480-1BC PORT ISABEL, TEX., U.S.A.(NCH) <i>Area:</i> ¹ (a) Western Gulf of Mexico; (b) Coastal waters-Port O'Connor, Tex. to Brownsville, Tex. 1040 ² , 1240 ² , 2670(A3J) F ² 1640, 2240 1035 1635 157.1(F3) F ³ 2235 On receipt 2670(A3J) W ¹ See figure 3	F ² F ³ W		2-0540-1B FORT-DE-FRANCE, FRENCH ANTILLES(FFP) <i>Area:</i> Caribbean Sea and Atlantic Ocean 10°N-20°N, 50°W-70°W On receipt and odd H033 2545(A3) W ¹ ¹ In French, repeated in English.		
2-0490-1B ² For area a and b ³ For area b SWAN ISLAND(WSG) <i>Area:</i> Eastern Gulf of Mexico and Western Caribbean Sea			2-0550-1B NORTH POST, TRINIDAD (9YL) <i>Area:</i> Caribbean Sea, Antilles, and Atlantic Waters to east 1250, 1850 2522(A3) W 2735(A3) 3165(A3) 4403(A3) 8805.6(A3) do. 157.30(F3) W 157.35(F3) 161.95(F3)		

Radio station, area, and broadcast time	Frequency and mode	Contents	Radio station, area, and broadcast time	Frequency and mode	Contents
2-0560-1B WILLEMSTAD, CURACAO(PJC) <i>Area:</i> Caribbean Sea and North Atlantic, Equator- 25°N, west of 45°W 1200 ¹ , 2300 ¹ 2182(A3) W 8770.4(A3) ¹ July 15-Nov. 14 only			2-0630-1C REYKJAVIK, ICELAND(TFA) <i>Area:</i> Coastal waters of Iceland 63°N-67.5°N, 12°W- 27°W On receipt 2182(A3) W ² On request 1876(A3) I ³ S ³ , 2761(A3) F ³ ² In Icelandic repeated in English ³ In English		
2-0570-1B PARAMARIBO, SURINAM(PZN) <i>Area:</i> North Atlantic waters, 05°N-15°N, 45°W-60°W 1233, 2133 2182(A3) W, A 2818			2-0640-1BC VALENTIA, IRELAND (EJK) <i>Area:</i> ¹ Coastal waters of Ireland 0833, 2033 1827(A3) F ² 3 0303, 0903, 1827(A3) W ³ 1503, 2103 ¹ See figure 4 ² For Shannon & Fastnet areas ³ Transmitted at conversational speed then repeated at dicta- tion speed		
2-0580-1B BERMUDA(ZBM) <i>Area:</i> (a) Western North Atlantic (b) Local Bermuda waters 1235, 2035 2582(A3) LR, F 0118, 0518 157.3(F3) 1318, 1718 On receipt 2582(A3) W			2-0650-1BC OBAN, SCOTLAND (GNE) <i>Area:</i> ¹ Northwestern coastal waters of United Kingdom 0803, 2003 2740(A3) F ² 3 0303, 0903, 2740(A3) W ³ 1503, 2103 ¹ See figure 4 ² For Malin, Hebrides, Bailey and Rockall areas ³ Transmitted at conversational speed then repeated at dicta- tion speed		
2-0590-1C JULIANEHAB, GREENLAND(OXF) <i>Area:</i> Coastal waters, southern Greenland 0135, 1335, 2129(A3) F 1935			2-0660-1BC WICK, SCOTLAND (GKR) <i>Area:</i> ¹ Northern coastal waters of United Kingdom 0803, 2003 1827(A3) F ² 3 0303, 0903, 1827(A3) W ³ 1503, 2103 ¹ See figure 4 ² For South-East Iceland, Faeroes, Hebrides, Fair Isle, Viking, and Cromarty areas ³ Transmitted at conversational speed then repeated at dicta- tion speed		
2-0600-1C HOLSTEINSBORG, GREENLAND(OYS) <i>Area:</i> Coastal waters, western Greenland 0145, 1345, 2265(A3) F 1945			2-0670-1BC STONEHAVEN, SCOTLAND (GND) <i>Area:</i> ¹ Eastern coastal waters of United Kingdom 0833, 2033 1856(A3) F ² 3 0303, 0903, 1856(A3) W ³ 1503, 2103 ¹ See figure 4 ² For Forth, Cromarty, and Forties areas ³ Transmitted at conversational speed then repeated at dicta- tion speed		
2-0610-1C UPERNAVIK, GREENLAND(OYN) <i>Area:</i> Coastal waters, western Greenland 0205, 1405, 3276(A3) F 2005					
2-0620-1C ANGMAGSSALIK, GREENLAND(OZL) <i>Area:</i> ¹ Coastal waters, eastern Greenland 0125, 1325, 2250(A3) F 1925, 0725 2288					

<i>Radio station, area, and broadcast time</i>	<i>Frequency and mode</i>	<i>Contents</i>	<i>Radio station, area, and broadcast time</i>	<i>Frequency and mode</i>	<i>Contents</i>
2-0680-1BC			2-0730-1BC		
CULLERCOATS, ENGLAND (GCC)			ILFRACOMBE, ENGLAND (GIL)		
<i>Area:</i> ¹			<i>Area:</i> ¹		
Eastern coastal waters of United Kingdom			Western coastal waters of United Kingdom		
0803, 2003	2719(A3)	F ^{2 3}	0833, 2033	2670(A3)	F ^{2 3}
0303, 0903,	2719(A3)	W ³	0303, 0903,	2670(A3)	W ³
1503, 2103			1503, 2103		
¹ See figure 4			¹ See figure 4		
² For Tyne, Dogger, Fisher areas			² For Lundy and Fastnet areas		
³ Transmitted at conversational speed then repeated at dictation speed			³ Transmitted at conversational speed then repeated at dictation speed		
2-0690-1BC			2-0740-1BC		
HUMBER, ENGLAND (GKZ)			PORTPATRICK, SCOTLAND (GPK)		
<i>Area:</i> ¹			<i>Area:</i> ¹		
Eastern coastal waters of United Kingdom			Irish Sea		
0833, 2033	1869(A3)	F ^{2 3}	0833, 2033	1883(A3H)	F ^{2 3}
0303, 0903,	1869(A3)	W ³	0303, 0903,	1883(A3H)	W ³
1503, 2103			1503, 2103		
¹ See figure 4			¹ See figure 4		
² For Humber and German Bight areas			² For Irish Sea and Lundy areas		
³ Transmitted at conversational speed then repeated at dictation speed			³ Transmitted at conversational speed then repeated at dictation speed		
2-0700-1BC			2-0750-1C		
NORTH FORELAND, ENGLAND (GNF)			RORVIK, NORWAY (LGD)		
<i>Area:</i> ¹			<i>Area:</i>		
Southeastern coastal waters of United Kingdom			Norwegian coastal waters, Froya-Rorvik-Melbu		
0803, 2003	1848(A3)	F ^{2 3}	On receipt	1757(A3H)	W
0303, 0903,	1848(A3)	W ³		161.9 MHz(F3)	
1503, 2103			On request	do.	F
¹ See figure 4			2-0760-1C		
² For Thames, Dover, and Wight areas			ORLANDET, NORWAY (LFO)		
³ Transmitted at conversational speed then repeated at dictation speed			<i>Area:</i>		
2-0710-1BC			Norwegian coastal waters, Stad-Rorvik		
NITON, ENGLAND (GNI)			On receipt	2635(A3H)	W
<i>Area:</i> ¹				161.8MHz(F3)	
English Channel waters				161.95MHz(F3)	
0833, 2033	1834(A3)	F ^{2 3}		162.00MHz(F3)	
0303, 0903,	1848(A3)	W ³	On request	do.	F
1503, 2103			2-0770-1C		
¹ See figure 4			ALESUND, NORWAY (LGA)		
² For Portland and Wight areas			<i>Area:</i>		
³ Transmitted at conversational speed then repeated at dictation speed			Norwegian coastal waters, Lindesnes-Rorvik		
2-0720-1BC			On receipt	1722(A3H)	W
LANDS END, ENGLAND (GLD)				161.9MHz(F3)	
<i>Area:</i> ¹			On request	do.	F
Southwestern coastal waters of United Kingdom			2-0780-1C		
0803, 2003	1841(A3)	F ^{2 3}	FLORO, NORWAY (LGL)		
0303, 0903,	1841(A3)	W ³	<i>Area:</i>		
1503, 2103			Norwegian coastal waters, Lindesnes-Rorvik		
¹ See figure 4			On receipt	2649(A3H)	W
² For Lundy, Plymouth, Biscay and Finisterre areas				161.95MHz(F3)	
³ Transmitted at conversational speed then repeated at dictation speed				162.00MHz(F3)	

<i>Radio station, area, and broadcast time</i>	<i>Frequency and mode</i>	<i>Contents</i>	<i>Radio station, area, and broadcast time</i>	<i>Frequency and mode</i>	<i>Contents</i>
On request do.		F	0954, 2154	2789(A3)	F
2-0790-1C			1154, 1954	2789(A3)	I
BERGEN, NORWAY (LGN)			On receipt	2789(A3)	W
<i>Area:</i>			2-0850-1B		
Norwegian coastal waters, Lindesnes-Rorvik			STOCKHOLM, SWEDEN (SDJ)		
On receipt	1743(A3H)	W	<i>Area:</i>		
	161.85MHz(F3)		Oresund; Sea of Bothnia; Sea of Aland;		
	161.75, 161.95		northern, central, and southern Baltic		
On request do.		F	0933	2754(A3)	F
2-0800-1C				1778(A3) ¹	
ROGALAND, NORWAY (LGQ)				1771	
<i>Area:</i>			1333	do.	I
Norwegian coastal waters, Lindesnes-Rorvik			2133	do.	F, I
On receipt	1729(A3H)	W	On receipt	do.	W
	161.80MHz(F3)		2-0860-1B		
	161.95MHz(F3)		TINGSTADE, SWEDEN (SAE)		
On request do.		F	<i>Area:</i>		
2-0810-1C			Sea of Aland; northern, central, and southern		
FARSUND, NORWAY (LGZ)			Baltic; Oresund		
<i>Area:</i>			1006, 2206	2768(A3)	F
Norwegian coastal waters, Swedish border-Lin-			1203, 2009	2768(A3)	I
desnes-Bulandet			On receipt	2768(A3)	W
On receipt	1750(A3H)	W	2-0870-1B		
	2663(A3H)		HARNOSAND, SWEDEN (SAH)		
	161.85MHz(F3)		<i>Area:</i>		
	161.95MHz(F3)		Sea and Bay of Bothnia, Sea of Aland		
On request do.		F	0833	2733(A3)	F
2-0820-1C				2761(A3)	
OSLO, NORWAY (LGO)			1133	do.	I
<i>Area:</i>			2157	do.	F, I
Norwegian coastal waters, Swedish border-Lin-			On receipt	do.	W
desnes			2-0880-1B		
On receipt	2649(A3H)	W	MARIEHAMN, FINLAND (OFH)		
	161.80MHz(F3)		<i>Area:</i>		
	161.95MHz(F3)		Northern Baltic Sea and Sea of Bothnia		
On request do.		F	0735, 1335	1852(A3)	I
2-0830-1B			1035, 1935	1852(A3)	F
GOTEBORG, SWEDEN (SAG)			2-0890-1B		
<i>Area:</i>			HELSINKI, FINLAND (OHG)		
Skagerrak, Kattegat and southern Baltic			<i>Area:</i>		
On request	1785(A3) ¹	F, I	Gulf of Finland		
	1904(A3) ²		0703, 1303	2810(A3)	I
On receipt	do.	W	1003, 1903	2810(A3)	F
¹ For ships in North Sea, Skagerrak & northern Kattegat			2-0900-1B		
² For ships in southern Kattegat			GDYNIA, POLAND (SPH)		
2-0840-1B			<i>Area:</i>		
KARLSKRONA, SWEDEN (SAA)			Baltic Sea		
<i>Area:</i>			0735, 1335,	1818(A3)	S, F
Southern Baltic			2135		

<i>Radio station, area, and broadcast time</i>	<i>Frequency and mode</i>	<i>Contents</i>	<i>Radio station, area, and broadcast time</i>	<i>Frequency and mode</i>	<i>Contents</i>
2-0910-1B			<i>Area:</i>		
RUGEN, GERMAN DEMOCRATIC REPUBLIC (DHS)			German Bight		
<i>Area:</i>			0810, 2010;	2614(A3)	W
Western and mid-Baltic			On receipt and		
0810, 2010	1719(A3)	S, F	H+03 or H+33		
2-0920-1B			2-0980-1C		
KIEL, FED. REPUBLIC of GERMANY (DAO)			SCHEVENINGEN, NETHERLANDS (PCH)		
<i>Area:</i>			<i>Area:</i>		
German coastal waters, Baltic Sea			Netherlands coastal waters, North Sea		
0840, 2040,	2775(A3)	W	0340, 0940	1869(A3)	W, S, F, LR
On receipt			1540, 2140	1939(A3)	
2-0930-1BC				2824(A3)	
RONNE, DENMARK (OYE)			Odd H+05	do.	I ¹
<i>Area:</i>			On receipt and	do	W
Danish coastal waters; the Skagerrak; North Sea			H+03 or H+33		
On receipt and	2586(A3)	W	¹ Dutch Ice		
odd H+33			Code		
2-0940-1BC			2-0990-1C		
LYNGBY, DENMARK (OXZ)			OOSTENDE, BELGIUM (OSU)		
<i>Area:</i>			<i>Area:</i> ¹		
Danish coastal waters; The Skagerrak; North Sea			Belgian coastal waters; Dover and Thames areas		
On receipt and	1687(A3)	W	0103, 0803		
odd H+03	1806(A3)		1303, 1603		
2-0950-1BC			2103	2761(A3H)	F
SKAGEN, DENMARK (OXF)			¹ See Figure 4		
<i>Area:</i>			2-1000-1BC		
Danish coastal waters; The Skagerrak; North Sea			BREST/LE CONQUET, FRANCE (FFU)		
On receipt and	1701(A3)	W	<i>Area:</i> ¹		
odd H+03	2740(A3)		(a) Western Channel and coastal waters of France		
2-0960-1C			(b) Coastal waters of Portugal		
BLAAVAND, DENMARK (OXB)			0733, 1633,	1673(A3)	S, F ^{2 3}
<i>Area:</i>			2153	2691(A3)	
Danish coastal waters; The Skagerrak; North Sea				1876(A3)	
On receipt and	1813(A3)	W	0600	1673(A3)	S, F ^{3 4}
odd H+03	2593(A3)			1876(A3)	
2-0970-1BC			¹ See figure 4a		
NORDDEICH, FED. REPUBLIC of GERMANY (DAN)			² For area a		
			³ In French		
			⁴ For area b		
			2-1010-1BC		
			SAINT-NAZAIRE, FRANCE (FFO)		
			<i>Area:</i> ¹		
			Western Channel and coastal waters of France		
			0903, 1803	1722(A3)	S, F ²
			¹ See figure 4a		
			² In French		

MEDITERRANEAN SEA

<i>Radio station, area, and broadcast time</i>	<i>Frequency and mode</i>	<i>Contents</i>	<i>Radio station, area, and broadcast time</i>	<i>Frequency and mode</i>	<i>Contents</i>
2-1020-2B			2-1060-2B		
VALENCIA, SPAIN			ATHENS, GREECE (SVA)		
<i>Area:</i> ¹			<i>Area:</i>		
Baleares, Palos, Alboran areas (Western Mediterranean)			Greek waters; Mediterranean Sea 15°E-35°E		
2000 1680(A3)	W		0713, 0933, 2590(A3)	S, F	
¹ See figure 5			1503, 2103		
			1215, 2015 8796		
2-1030-2C			2-1070-2B		
GRASSE, FRANCE (TKM)			BAR, YUGOSLAVIA (Bar Radio)		
<i>Area:</i> ¹			<i>Area:</i>		
Western Mediterranean Sea, north of 40°N, east to 11°E			Adriatic Sea		
0733, 1233, 2649(A3)	S, F ²		0850, 1450, 2670(A3)	S, F	
1645			2050		
¹ See figure 4a			2-1080-2B		
² In French			SPLIT, YUGOSLAVIA (Split Radio)		
2-1040-2C			<i>Area:</i>		
MARSEILLES, FRANCE (FFM)			Adriatic Sea		
<i>Area:</i> ¹			0545, 1245, 2685(A3)	S, F	
Western Mediterranean Sea, north of 40°N, east to 11°E			1945		
0705, 1220, 1906(A3)	S, F ²		2-1090-2B		
1615			RIJEKA, YUGOSLAVIA (Rijeka Radio)		
¹ See figure 4a			<i>Area:</i>		
² In French			Adriatic Sea		
2-1050-2B			0535, 1435, 2771(A3)	S, F	
TRIPOLI, LIBYAN ARAB REPUBLIC (5AT)			1935		
<i>Area:</i>			2-1100-2B		
Waters 10°E-25°E, south of 34°N			HAIFA, ISRAEL (4XO)		
0833, 1733 2197(A3)	S, F		<i>Area:</i>		
0948, 1748 2182(A3J)	W		Mediterranean Sea east of 25°E		
			0703, 1903 2649(A3)	F	
			0303, 1103, 2182(A3)	W	
			1503, 2303		

SOUTH ATLANTIC OCEAN

<i>Radio station, area, and broadcast time</i>	<i>Frequency and mode</i>	<i>Contents</i>	<i>Radio station, area, and broadcast time</i>	<i>Frequency and mode</i>	<i>Contents</i>
2-1110-3C			1333	1765(A3)	LR
CAPE TOWN, SOUTH AFRICA (ZSC 30)			2-1130-3C		
<i>Area:</i>			SOUTH AFRICAN BROADCAST CORPORATION		
Coastal waters, Orange River-East London			<i>Area:</i>		
0948, 1748	1765(A3)	F	Coastal waters, Cunene River-Agulhas		
1333	1765(A3)	LR	1135	5995(A3)	F
2-1120-3C				9680(A3)	
WALVIS BAY, SOUTH AFRICA (ZSV4)				11790(A3)	
<i>Area:</i>			2105	3965(A3)	F
Coastal waters, Cunene River-Orange River				4965(A3)	
0933, 1633	1765(A3)	F			

NORTH PACIFIC OCEAN

Radio station, area, and broadcast time	Frequency and mode	Contents	Radio station, area, and broadcast time	Frequency and mode	Contents
2-1140-4A			0200, 1400	2670(A3H)	F ²
FORT COLLINS, COLORADO (WWV)¹			¹ See figure 12		
Area:			² For area d only		
North Pacific east of 140°W			2-1170-4ABC		
H+10		S, W ²	SAN FRANCISCO, CALIF., U.S.A. (KMI)		
	2500(A3)		Area: ¹		
	5000(A3)		(a) North Pacific, Equator-30°N, east of 140°W		
	10000(A3)		(b) North Pacific, north of 30°N, east of 160°E		
	15000(A3)		(c) Coastal waters, Pt. St. George Calif.-Pt. Conception, Calif.		
¹ National Bureau of Standards time and frequency station			(d) Offshore Waters, 20-250 miles from shore, Mexican Border-Cape Flattery, Wash.		
² Storm information message gives location and movement of storm centers and associated wind speed.			0000, 0600	4371(A3A)	S, F
³ Extra time slot available			1500	8738.4(A3A)	
2-1150-4A				8735.2(A3A)	
KEKAHA, HAWAII (WWVH)¹				13161.5(A3A)	
Area:				13151.0(A3A)	
North Pacific Ocean.				17307.5(A3A)	
South Pacific Ocean			¹ See figure 12		
H+48,	2500(A3)	S, W ²	³ A frequency will not be used for weather transmissions if other traffic is in progress at broadcast time.		
H+49,	5000(A3)		2-1181-4C		
H+50 ³	10000(A3)		ADAK, ALASKA (NMJ21)		
	15000(A3)		Area: ¹		
¹ National Bureau of Standards time and frequency station			Alaskan coastal waters, Cape Sarichef-Attu		
² Storm information message gives location and movement of storm centers and associated wind speed.			0030, 0530,	2670(A3H)	S, F
³ Broadcast segments of 45 seconds duration are separated by 15-second intervals.			1340, 1730		
⁴ Extra time slot available			¹ See figure 10.		
2-1160-4ABC			2-1190-4C		
SAN FRANCISCO, CALIF., U.S.A. (NMC)			ATTU, ALASKA, U.S.A. (NMJ22)		
Area: ¹			Area: ¹		
(a) North Pacific, Equator-30°N, east of 140°W			Alaskan coastal waters, Cape Sarichef-Attu		
(b) North Pacific, north of 30°N, east of 160°E			(Areas 12 and 13)		
(c) Offshore Waters, 20-250 miles from shore, Mexican Border-Cape Flattery, Wash.			0045, 0545,	2670(A3H)	S, F
(d) Coastal waters, Pt. St. George, Calif.-Pt. Conception, Calif.			1350, 1745		
0430, 1030,	4393.4(A3J)	S, F	¹ See figure 10.		
1230,	8760.8(A3J)		2-1200-4C		
	13144(A3J)		CAPE SARICHEF, ALASKA, U.S.A. (NRW)		
1630, 2230	8760.8(A3J)	S, F	Area: ¹		
	13144(A3J)		Alaskan coastal waters, Castle Cape-Adak; Cape Sarichef-Port Heiden and Bristol Bay		
	17290(A3J)		(Areas 5, 6, and 12)		
1530, 1900,	157.1 MHz(F3)	F ²	0015, 0515,	2670(A3H)	S, F
2330			1310, 1715		
			¹ See figure 10		

Radio station, area, and broadcast time	Frequency and mode	Contents	Radio station, area, and broadcast time	Frequency and mode	Contents
2-1210-4C			2100		
COLD BAY, ALASKA, U.S.A. (KCI95)			2-1260-4C		
Area: ¹			JUNEAU, ALASKA, U.S.A. (KCI97)		
Alaskan coastal waters, Areas 3, 5, 6, 7, 8, 12, 13			Area: ¹		
0500, 1700	2512(A3)	S, F	Alaskan coastal waters, Area 1		
0800, 2200	4134.9		0600, 1900,	2382(A3)	S, F
¹ See figure 10			¹ See figure 10		
2-1220-4C			2-1261-4C		
KING SALMON, ALASKA, U.S.A. (KCI98)			JUNEAU, ALASKA, U.S.A. (NMJ 1)		
Area: ¹			Area:		
Alaskan coastal waters, Areas 5, 6, 7, 8			Alaskan coastal waters-Skagway to Dixon En- trance		
0215 ² , 2015 ²	2382(A3)	S, F	0100, 0700,	2670(A3H)	S, F
¹ See figure 10			1300, 1900	157.1MHz(F3)	
² May-Sept.			¹ See Figure 10		
2-1230-4C			2-1262-4C		
KODIAK, ALASKA, U.S.A. (NOJ)			JUNEAU, ALASKA, U.S.A. (WGG58)		
Area: ¹			Area:		
Gulf of Alaska;			Alaskan coastal waters, Area 1		
Alaskan coastal waters, Areas 2, 3, 4, 5, 6			0230, 1630,	2400 (A3)	S, F
0200, 0445,	2670(A3H)	S, F	2100, 0430		
0900, 1415,	6521.8(A3J)		1430		
1645, 2100			¹ See figure 10		
¹ See figure 10			2-1270-4C		
2-1231			BIORKA ISLAND, ALASKA, U.S.A. (NMJ18)		
KODIAK, ALASKA (WBH-29)			Area: ¹		
Area: Gulf of Alaska			Alaskan coastal waters, Areas 1 and 2		
0400, 1800	4134.9(A3)	W, F	0100, 0800,	2670(A3H)	S, F
2-1240-4BC			1300, 2000		
YAKUTAT, ALASKA, U.S.A. (KGD91)			¹ See figure 10		
Area: ¹			2-1271		
Alaskan coastal waters, Areas 1 and 2; Gulf of Alaska			PETERSBURG, ALASKA (WRN-42)		
0900, 2100	2382(A3)	S, F	Area: Southeast Alaska Coastal Waters, Area 1		
0300, 1600	4134.9		0230, 0430	162.0MHz(F3)	F
¹ See figure 10			1430, 1630		
2-1250-4C			2100		
OCEAN CAPE, ALASKA, U.S.A. (NMJ19)			2-1272		
Area: ¹			LENA POINT, ALASKA (WRN-40)		
Alaskan coastal waters, Areas 1 and 2			Area: Southeast Alaska Coastal Waters, Area 1		
0145, 0845,	2670(A3H)	S, F	0230, 0430	162.0MHz(F3)	F
1345, 2045	157.1MHz(F3)		1430, 1630		
¹ See figure 10.			2100		
2-1255			2-1279		
MUD BAY, ALASKA (WRN-43)			KETCHIKAN, ALASKA (WRN-41)		
Area: Southeast Alaska Coastal Waters, Area 1			Area: Southeast Alaska Coastal Waters, Area 1		
0230, 0430,	162.0MHz(F3)	F	0230, 0430	162.0MHz(F3)	F
1430, 1630			1430, 1630		

<i>Radio station, area, and broadcast time</i>	<i>Frequency and mode</i>	<i>Contents</i>	<i>Radio station, area, and broadcast time</i>	<i>Frequency and mode</i>	<i>Contents</i>
2100			2-1320-4C		
2-1280-4C			BULL HARBOR, B.C., CANADA (VAG)		
KETCHIKAN, ALASKA, U.S.A. (NMJ)			<i>Area:</i> ¹		
<i>Area:</i> ¹			Coastal waters of British Columbia		
Alaskan coastal waters, Areas 1 and 2			0225, 1220	1630(A3H)	S, F, LR
0115, 0815, 2670(A3H)	S, F		1455, 1540,	161.65MHz(F3)	
1315, 2015			1705, 1940	161.9MHz(F3)	
¹ See figure 10			¹ See figure 11		
2-1281-4C			2-1330-4C		
KETCHIKAN, ALASKA, U.S.A. (WGG 56)			ALERT BAY, B.C., CANADA (VAF)		
<i>Area:</i> ¹			<i>Area:</i> ¹		
Alaskan coastal waters, Area 1			Coastal waters of British Columbia		
0230, 0430, 1430 2312(A3)	S, F		0420, 1405,	1630(A3h)	S, F, LR
1630, 2100			1520, 1920	161.65MHz(F3)	
¹ See figure 10			161.9MHz(F3)		
2-1285			¹ See figure 11		
SITKA, ALASKA (WDU-29)			2-1340-4C		
<i>Area: Alaskan Coastal Waters, Area 1</i>			SPRING ISLAND, B.C., CANADA (VAE2)		
0230, 0430 2400 (A3)	S, F		<i>Area:</i> ¹		
1430, 1630			Queen Charlotte Sound, West Coast Vancouver		
2100			Island		
2-1290-4BC			0510, 1425,	1630(A3)	S, F, LR
ANNETTE, ALASKA, U.S.A. (KGD58)			2110		
<i>Area:</i> ¹			1235		
Alaskan coastal waters, Area 1; Gulf of Alaska			¹ See figure 11		
1000, 2200 2382(A3)	S, F		2-1350-4C		
0200, 1500 4134.9			TOFINO, B.C., CANADA (VAE)		
¹ See figure 10			<i>Area:</i> ¹		
2-1300-4C			Coastal waters of British Columbia between		
PRINCE RUPERT, B.C., CANADA (VAJ)			48.5°N And 52°N		
<i>Area:</i>			0350, 1330,	1630(A3H)	S, F, LR
Hecate Strait and Dixon Entrance			1440, 1930	161.65MHz(F3)	
0340, 0845,	1630(A3H)	S, F, LR	161.9MHz(F3)		
1305, 1550,	161.65MHz(F3)		¹ See figure 11		
1840, 2150	161.69MHz(F3)		2-1360-4C		
2-1310-4C			COMOX, B.C., CANADA (VAC)		
SANDSPIT, B.C., CANADA (VAH)			<i>Area:</i>		
<i>Area:</i>			Queen Charlotte Strait, Johnstone Strait, Juan		
Queen Charlotte Sound, Hecate Strait, Dixon			de Fuca Strait, Strait of Georgia		
Entrance, West Coast Charlotte Is.			0435, 1435,	1630(A3)	S, F, LR
0520, 0910,	1630(A3H)	S, F, LR	1720, 2040	161.65MHz(F3)	
1240, 1735,	161.9MHz(F3)		161.9MHz(F3)		
1850, 2220			2-1370-4C		
			VANCOUVER, B.C., CANADA (VAI)		
			<i>Area:</i>		
			Juan de Fuca Strait, Strait of Georgia		
			0410, 1310,	1630(A3H)	S, F, LR
			1610, 1910	161.65MHz(F3)	
			2210, 2310	161.9MHz(F3)	

<i>Radio station, area, and broadcast time</i>	<i>Frequency and mode</i>	<i>Contents</i>	<i>Radio station, area, and broadcast time</i>	<i>Frequency and mode</i>	<i>Contents</i>
2-1380-4C			0515, 1715	2598(A3H)	S, F, LR
VICTORIA, B.C., CANADA (VAK)			2-1440-4C		
<i>Area:</i>			2-1450-4C		
West Coast Vancouver Is., Juan de Fuca Strait, Strait of Georgia			COOS BAY, ORE., U.S.A. (KTJ)		
0420, 1250,	1630(A3H)	S, F, LR	<i>Area:</i>		
1415, 2010	161.65MHz(F3)		Coastal waters, Tatoosh Is.-Pt. St. George, Calif.		
2250	161.9MHz(F3)		1730	2566(A3H)	S, F, LR
2-1390-4C			2-1451-4C		
PORT ANGELES, WASH., U.S.A. (NOW)			COOS BAY, ORE., U.S.A. (NOE)		
<i>Area:</i>			<i>Area:</i>		
Strait of Juan de Fuca, Inland Waters of Western Washington			coastal waters, Tatoosh Is.-Pt. St. George, Calif.		
0545, 1745	2670(A3J)	S, F, LR	1215	2670(A3J)	F
0530,	157.1MHz(F3)	F	0520, 0530,	157.1MHz(F3)	F
1730			0540,		
2-1400-4C			1720, 1730,		
SEATTLE, WASH., U.S.A. (KOW)			1740		
<i>Area:</i>			2-1460-4C		
Inland Waters of western Washington; Strait of Juan de Fuca; Coastal waters, Tatoosh Is.- Pt. St. George, Calif.			EUREKA, CALIF., U.S.A. (KOE)		
0500 ¹ , 1700 ¹	2522(A3H)	S, F, LR	<i>Area:</i>		
¹ Broadcast 1 hour earlier during Daylight Saving Time.			Coastal waters, Pt. St. George, Calif.-Pt. Con- ception, Calif.		
2-1410-4C			0445, 1645,	2450(A3H)	S, F, LR
SEATTLE, WASH., U.S.A. (NMW43)			2145	2506(A3H)	
<i>Area:</i>			On receipt and	do.	W
Inland Waters of Western Washington			odd hours		
1700	157.1MHz(F3)	F	2-1470-4C		
2-1420-4C			HUMBOLDT BAY, CALIF., U.S.A. (NMC11)		
ASTORIA, ORE., U.S.A. (NMW)			<i>Area:</i>		
<i>Area:</i>			Coastal waters, Pt. St. George, Calif.-Pt. Con- ception, Calif.		
Coastal waters, Tatoosh Is.-Pt. St. George, Calif.; Strait of Juan de Fuca; Inland Waters of western Washington			0300, 1500	2670(A3J)	F
0530, 1730	2670(A3J)	S, F, LR	1545, 2315	157.1 MHz(F3)	W
1200			2-1480-4C		
0515, 1715	157.1MHz(F3)	F	SAN FRANCISCO, CALIF., U.S.A. (KLH)		
2-1430-4C			<i>Area:</i>		
ASTORIA, ORE., U.S.A. (KFX)			Coastal waters Pt. St. George, Calif.-Pt. Concep- tion, Calif.		
<i>Area:</i>			0430, 1630,	2450(A3H)	S, F
Coastal waters; Tatoosh Is.-Pt. St. George, Calif.			2130	2506(A3H)	
			2-1481-4C		
			MONTEREY, CALIF., U.S.A. (NMC6)		
			<i>Area:</i>		
			Coastal waters, Pt. Conception, Calif.-Mexican Border		
			0330, 1530;	2670(A3J)	W
			On receipt,		

Radio station, area, and broadcast time	Frequency and mode	Contents	Radio station, area, and broadcast time	Frequency and mode	Contents
1545, 2345	157.1 MHz(F3)	F	¹ No broadcast on Monday. ² No broadcast on Sunday.		
2-1490-4C			2-1530-4AC		
LONG BEACH, CALIF., U.S.A. (NMQ)			HONOLULU, HAWAII, U.S.A. (NMO)		
<i>Area:</i>			<i>Area:</i>		
Coastal waters, Pt. Conception, Calif.-Mexican Border			(a) Coastal waters out 20 Miles from Hawaiian Islands		
0500, 1430, 2670(A3J)		S, F, LR	(b) Offshore waters within 1000 Miles of Hawaiian Islands		
1900, 2300 157.1MHz(F3)		W	(c) North Pacific: Equator-50°N, 140°W-160°E		
2-1500-4C			(d) South Pacific: Equator-25°S, 110°W-160°E		
SAN PEDRO, CALIF., U.S.A. (KOU)			0000, 0600 2670(A3H)		F ¹
<i>Area:</i>			1200, 1800		
Coastal waters, Pt. Conception, Calif.-Mexican Border			0545, 1745 6521.8(A3J) ²		F ³
0400, 1600 2466(A3H)		S, F	8760.8(A3J)		
2566(A3H) ¹			13144(A3J) ⁴		
¹ Used in daytime only.			0500, 1700 157.1 MHz(F3)		W
2-1510-4B			¹ For area a & b.		
LA JOLLA, CALIF., U.S.A. (WWD)¹			² Used at 0545 only.		
<i>Area:</i> ²			³ For areas c & d		
Offshore waters (20-250 Miles Offshore) from Cape Flattery, Wash. to Guadalupe Is.			⁴ Used at 1745 only		
0245, 1300 4409.4(A3J)		S, F	2-1540-4AC		
8789.6(A3J)			HONOLULU, HAWAII, U.S.A. (KBP)		
13147.5(A3J)			<i>Area:</i>		
¹ Broadcast Mon.-Fri., June 15-Oct. 15.			(a) Coastal waters out 20 Miles from Hawaiian Islands		
² See figure 12.			(b) Offshore waters within 1000 Miles of Hawaiian Islands		
2-1520-4A			0400, 1000, 2530(A3)		F
HONOLULU, HAWAII, U.S.A. (KQM)			1600, 2200		
<i>Area:</i>			2-1541		
(a) North Pacific: Equator-50°N, 140°W-160°E			GUAM, MARIANAS IS. (NRV)		
(b) South Pacific: Equator-25°S, 110°W-160°E			<i>Area:</i>		
0525 ¹ , 2025 ² 8751.2(A3H)		S, F	Local Waters		
17272.5(A3H)			1005, 2205 2670(A3J)		F
			0730, 2330 157.1MHz(F3)		F

SOUTH PACIFIC OCEAN

Radio station, area, and broadcast time	Frequency and mode	Contents	Radio station, area, and broadcast time	Frequency and mode	Contents
2-1545			0140, 0740, 2207(A3)		LR
KEKAHA, HAWAII (WWVH)			1940		
See 2-1150.			0318, 0918, 2207(A3)		S, F
			1518, 2118		
2-1547			2-1590-5C		
HONOLULU, HAWAII (KQM)			AWARUA, NEW ZEALAND (ZLB)		
See 2-1520			<i>Area:</i>		
2-1550-5B			New Zealand coastal waters		
MAHINA, TAHITI (MAHINA RADIO)			0125, 0725, 2207(A3)		LR
<i>Area:</i> ¹			1925		
Waters 08°S-28°S, 134°W-155°W			0248, 0848, 2207(A3)		S, F
0030, 0230, 8764(A3J) ²	W ³		0940, 1448,		
1800, 2100			2048, 2140,		
0533, 1703 ⁴	2620(A3)	W ³	2-1600-5C		
2100	8764(A3J)	F ³	CHATHAM ISLAND, NEW ZEALAND (ZLC)		
2115	8764(A3H)	F ³	<i>Area:</i>		
2200	2670(A3)	F ³	Waters in vicinity of Chatham Islands and		
¹ See figure 17.			between Chatham Is. and New Zealand		
² Broadcast on A3J and repeated on A3H at beginning of			0350, 0950, 2207(A3)		S, F
watch period of "Schooner traffic".			2150		
³ In French			2-1610-5C		
⁴ At broadcast times of AVURNAV			WELLINGTON, NEW ZEALAND (ZLW)		
2-1560-5B			<i>Area:</i>		
SUVA, FIJI ISLANDS (3DP)			New Zealand coastal waters		
<i>Area:</i>			0135, 0735, 2153(A3)		LR
(a) Equator-25°S, 160°E-140°W			1935		
0003, 0403, 4377.4(A3)	F		0303, 0903, 2153(A3)		S, F
0803, 2003 8796(A3)			1003, 1503,		
			2103, 2203		
2-1570-5B			2-1620-5B		
NOUMEA, NEW CALEDONIA (RADIO NOUMEA)			ADELAIDE, AUSTRALIA (VIA)		
<i>Area:</i> ¹			<i>Area:</i> ¹		
Waters 300 Miles Seaward from New Caledonia			Offshore waters-Adelaide area		
and New Hebrides			0848, 2303 4136.3(A3H)		F, LR,
0000, 0200, 670(A3)	S, F ²		2201(A3A,H,J)		SR
0900, 1100 3355(A3)			¹ See figure 19a		
7170(A3)			2-1630-5B		
11825(A3)			MELBOURNE, AUSTRALIA (VIM)		
¹ See figure 18			<i>Area:</i> ¹		
² In French			Offshore waters-Melbourne area		
2-1580-5C			0303, 0733, 2201(A3H)		F, LR,
AUCKLAND, NEW ZEALAND (ZLD)			2148, 2333 ² 4136.3(A3H)		SR
<i>Area:</i>					
New Zealand coastal waters					

<i>Radio station, area, and broadcast time</i>	<i>Frequency and mode</i>	<i>Contents</i>	<i>Radio station, area, and broadcast time</i>	<i>Frequency and mode</i>	<i>Contents</i>
1133, 1533, 1933 ¹ See figure 19a ² Sunday 0718	2201(A3H) 4136.3(A3H)	W	THURSDAY ISLAND, AUSTRALIA (VII)		
2-1640-5B			<i>Area:</i> ¹		
SYDNEY, AUSTRALIA (VIS)			Offshore waters-Darwin, Port Moresby, Townsville and Brisbane areas		
<i>Area:</i> ¹			0648, 2303	2201(A3H)	F
Offshore waters-Sydney area			0248	4136.3	
0203, 0703, 2203	4136.3(A3H) 4136.3(A3H) 2201(A3H)	F, LR, SR	¹ See figure 19a		
¹ See figure 19a			2-1680-5B		
2-1650-5B			DARWIN, AUSTRALIA (VID)		
BRISBANE, AUSTRALIA (VIB)			<i>Area:</i> ¹		
<i>Area:</i> ¹			Offshore waters-Darwin area		
Offshore waters-Brisbane and Townsville areas			0733, 2233	2201(A3,A3H)	F, LR,
0318, 0833, 2333	4136.3(A3H) (A3H) 4136.3 4136.3	F, LR, SR	0348	4136.3(A3,A3H)	SR
¹ See figure 19a			¹ See figure 19a		
2-1660-5B			2-1690-5B		
TOWNSVILLE, AUSTRALIA (VIT)			PORT MORESBY, PAPUA (VIG)		
<i>Area:</i> ¹			<i>Area:</i> ¹		
Offshore waters-Townsville area			Offshore waters-Port Moresby area		
0333, 0748 2133	2201(A3H) 4136.3	F, LR, SR	0018, 2203	4407(A3)	F, LR, SR
¹ See figure 19a			0603	2201(A3)	F, LR, SR
2-1670-5B			¹ See figure 19a		
			2-1700-5B		
			RABAU, NEW BRITAIN (VJZ)		
			<i>Area:</i> ¹		
			Offshore waters-Rabaul area		
			0503, 2103	2201(A3) 4407(A3)	F, LR, SR
			¹ See figure 19a		

INDIAN OCEAN, RED SEA AND PERSIAN GULF

<i>Radio station, area, and broadcast time</i>	<i>Frequency and mode</i>	<i>Contents</i>	<i>Radio station, area, and broadcast time</i>	<i>Frequency and mode</i>	<i>Contents</i>
2-1710-6C			2-1760-6C		
CAPE TOWN, SOUTH AFRICA (ZSC30)			JAZIRAT DAS (2AI15)		
<i>Area:</i>			<i>Area:</i>		
Coastal waters, Orange River-East London			Local areas around Jazirat Das, Umm Shaif, Rig		
0948, 1748	1765(A3)	F	az Zakum, Hail and Dalmah		
1333	1765(A3)	LR	0445, 1100	Ch. 18, 20(F3)	F
2-1720-6C			2-1770-6C		
PORT ELIZABETH, SOUTH AFRICA (ZSQ7)			AL KUWAIT(9KK)		
<i>Area:</i>			<i>Area:</i>		
Coastal waters, Agulhas-Lourenco Marques			Vicinity of Al Kuwait		
0933, 1720	1765(A3)	F	0530, 1730	2200(A3)	F
1340	1765(A3)	LR			
2-1730-6C			2-1780-6B		
DURBAN, SOUTH AFRICA (ZSD)			BROOME, AUSTRALIA (VIO)		
<i>Area:</i>			<i>Area:</i> ¹		
Coastal waters, Agulhas-Lourenco Marques;			Offshore waters, Perth, Broome and Darwin		
Mozambique Channel south of 15°S			<i>Areas</i>		
0918	1765(A3)	F	0803, 2333	2201(A3)	F, LR,
	8744.8(A3H)			4136.3(A3H)	SR
1703	1765(A3)	F			
	4377.4(A3)				
1303	1765(A3)	LR			
2-1740-6B			2-1790-6B		
PORT LOUIS HARBOR, MAURITIUS(3BB)			CARNARVON, AUSTRALIA (VIC)		
<i>Area:</i> ¹			<i>Area:</i> ¹		
Southwest Indian Ocean, 10°S-30°S, 50°E-85°E			Offshore waters, Perth and Broome areas		
0435, 1635	4403(A3)	S, F	0418, 0818,	2201(A3,A,H,J)	F
			2318	4136.3(A3A,H,J)	
¹ See figure 20			¹ See figure 19b		
2-1750-6B			2-1800-6B		
NAIROBI, KENYA(5YE)			ESPERANCE, AUSTRALIA (VIE)		
<i>Area:</i> ¹			<i>Area:</i> ¹		
Indian Ocean 12°N-11°S, from Coast to 60°E			Offshore waters, 30°S-45°S, 100°E-129°E		
1240	9086(A3J)	S, F	0103	2201(A3)	W
				4136.3(A3)	
			0833	do.	F
¹ See figure 20			¹ See figure 19b		

Section 3-Radiofacsimile

Serial No.	Station and abbreviation	Serial No.	Station and abbreviation
NORTH ATLANTIC OCEAN		0290.....	Buenos Aires, Argentina
0010.....	Frobisher, N.W.T., Canada	0300.....	Pretoria, South Africa
0020.....	Halifax, N.S., Canada	NORTH PACIFIC OCEAN	
0030.....	Boston, Mass.	0310.....	Edmonton, Alberta, Canada
0040.....	Brentwood, N.Y.	0320.....	San Francisco, Calif.
0050.....	Norfolk, Va.	0330.....	LaJolla, Calif.
0060.....	Washington, D.C.	0340.....	Honolulu, Hawaii
0070.....	Bracknell, U.K.	0350.....	Honolulu, Hawaii
0080.....	Bracknell, U.K.	0360.....	Guam, Mariana Is.
0090.....	Northwood, U.K.	0370.....	Khabarovsk, U.S.S.R.
0110.....	Stockholm, Sweden	0380.....	Tokyo, Japan
0120.....	Helsinki, Finland	0390.....	Bangkok, Thailand
0130.....	Moscow, U.S.S.R.	0400.....	Canberra, Australia
0135.....	Offenbach FRG	SOUTH PACIFIC OCEAN	
0140.....	Hamburg, Fed. Republic of Germany	0410.....	Darwin, Australia
0150.....	Paris, France	0420.....	Honolulu, Hawaii
0160.....	Rota, Spain	0430.....	Guam, Mariana Is.
0170.....	Madrid, Spain	0440.....	Canberra, Australia
0180.....	Dakar, Senegal	INDIAN OCEAN, RED SEA AND PERSIAN GULF	
MEDITERRANEAN SEA		0450.....	Pretoria, South Africa
0190.....	Rota, Spain	0460.....	Nairobi, Kenya
0200.....	Madrid, Spain	0470.....	Rota, Spain
0210.....	Paris, France	0480.....	Cairo, Egypt
0220.....	Rome, Italy	0490.....	Tehran, Iran
0230.....	Beograd, Yugoslavia	0500.....	New Delhi, India
0250.....	Sofia, Bulgaria	ANTARCTIC WATERS	
0260.....	Ankara, Turkey	0510.....	Orcadas, Orkney Is.
0270.....	Cairo, Egypt		
SOUTH ATLANTIC			
0280.....	Rio de Janeiro, Brazil		

SECTION 3

RADIOFACSIMILE BROADCASTS

Explanatory Notes:

1. Facsimile Transmission (F4 emission) frequencies listed are carrier frequencies.
2. Transmission speed is 120 scans/minute unless otherwise noted.
3. Hours that a frequency is in use are shown inside parentheses immediately following the frequency. (No indication of time if operation is 24 hours/day.)
4. A general description of the areal coverage is given for each broadcast.
5. Detailed schedules of transmission of products on U.S. Navy radio stations are subject to change and are not included. However, the current schedule is broadcast at a fixed time each day and this time is listed.
6. Only radiofacsimile charts of interest to most mariners are listed in this section. Following are definitions of the terms used to describe these charts:

Analysis—A chart that shows existing sea-level pressure patterns, including centers of high and low pressure, and frontal systems. Plotted observational data may be included.

Prognosis—A chart showing forecast conditions at a specified future time.

Nephanalysis—Analysis of satellite photographs in terms of type and amount of clouds.

Significant Weather Depiction Chart—A chart that shows frontal systems with associated cloud pattern and precipitation or fog areas. These charts may show either recent conditions or forecast conditions.

Wave/Swell/Sea Condition Charts—These charts vary in content. In general, they show sea and/or swell heights, direction from which the sea and swell are moving, and/or periods. The charts may be either analyses or prognoses.

Sea-Surface Temperature Chart—An analysis of the temperature of the sea, for a given ocean area.

7. The Appendix contains information to aid in the interpretation of radiofacsimile weather charts.

NORTH ATLANTIC OCEAN

<i>Radio station, area, frequency, and broadcast time</i>	<i>Contents</i>	<i>Radio station, area, frequency, and broadcast time</i>	<i>Contents</i>
3-0010-1		3-0040-1	
FROBISHER N.W.T., CANADA (VRC 3) ¹		BRENTWOOD, N.Y., U.S.A. (WFH/WFK)	
<i>Area:</i>		<i>Area:</i>	
Hudson Strait, Hudson Bay, East Coast Baffin Island, Foxe Basin, Lancaster Sound, Queen Elizabeth Islands		Western North Atlantic ¹	
<i>Frequency (kHz):</i>		<i>Frequency (kHz):</i>	
3253, 7710		9290(0712-1212)	
1815	Ice information	9389.5(0712-1212)	
0815	Ice information (repeat)	11035(0712-1212)	
¹ Broadcast July 1-Oct. 15		17436.5(1950-2350)	
3-0020-1		0750, 1950	Surface analysis
HALIFAX, N.S., CANADA (CFH)		1046, 2307	24-hr surface/sea and wind prognoses ²
<i>Area:</i>		1150	36-hr wind wave/swell prognosis; 24-hr/36-hr combined sea height prognoses ²
Western North Atlantic			
<i>Frequency (kHz):</i>			
4271, 9890, 13510, 133.15 ¹			
0316, 0916,	Early surface analysis		
1516, 2116			
0500, 1100,	Final surface analysis		
1700, 2300			
0000, 1200	Ice information		
0416, 1616	Wave analysis/12-hr prognosis		
0616, 1816	24/36-hr wave prognoses		
0520, 1720	36-hr surface/500 mb prognoses		
1120, 2320	42/48-hr surface/500 mb prognoses		
1020	Surface extended prognosis ²		
0800, 2000	Sea surface temperature analysis		
2220	Test chart		
¹ 133.15 kHz not used 1200-1600 on Wednesday			
² For 3rd, 4th and 5th days			
3-0030-1		3-0050-1	
BOSTON, MASS., U.S.A. (NIK)		NORFOLK, VA., U.S.A. (NAM) ¹	
<i>Area:</i>		<i>Area:</i>	
Western North Atlantic		North Atlantic Ocean	
<i>Frequency (kHz):</i>		<i>Frequency (kHz):</i>	
8502, 12750		3357, 4975, 8080	
1600	Ice information ¹	10865, 16410, 20015	
¹ Limit of all known ice; limit of sea ice and iceberg loca- tions, March-July approximately		0000	Schedule
		1200	Test chart
		¹ U.S. Navy Fleet Broadcast (NFAF)	
		3-0060-1	
		WASHINGTON, D.C. U.S.A. (KWAF) ¹	
		<i>Area:</i>	
		North Atlantic Ocean	
		<i>Frequency (kHz): ²</i>	
		4793.5, 6912.5, 10185,	
		12201, 13472.5, 14671.5,	
		15620.5, 17670.5, 19955,	
		23068.5	
		0636, 1836	Surface analysis
		0700, 1900	12/24-hr surface and significant weather prognosis
		1200	30-hr surface prognosis
		0336, 0900	Weather advisory
		1545, 2000	

<i>Radio Station, area, frequency, and broadcast time</i>	<i>Contents</i>	<i>Radio station, area, frequency, and broadcast time</i>	<i>Contents</i>
0530	Extended forecast (Mon., Wed., Fri.)	1440	48/72-hr surface prognoses
0500, 0515, 1708, 1730	Test chart	0900, 2037	Wave analysis
¹ U.S. Air Force broadcast beamed simultaneously to Panama Canal Zone on separate sets of frequencies		1315, 2359	24-hr wave prognosis
² For each broadcast two frequencies are chosen each day, depending on radio propagation conditions.		0110, 1326	48-hr wave prognosis
3-0070-1		1159, 1759	Nephanalysis
BRACKNELL, UNITED KINGDOM (GFA)		1500	Extended inference (72-hr)
<i>Area:</i>		1400	Sea ice observations
Eastern North Atlantic		1420	Sea surface temperature, British Isles coastal waters
<i>Frequency (kHz):</i>		0100, 1300	Radio frequency check
3289.5(0000-2400)		Note: A schedule is transmitted each Thursday at 0837 GMT.	
4610(1800-2400)		3-0090-1	
8040(0000-2400)		NORTHWOOD, UNITED KINGDOM (MHU)	
11086.5(0000-2400)		<i>Area:</i>	
14582.5(0600-1800)		Northeast Atlantic	
0333, 0826,	Surface analysis	<i>Frequency (kHz):</i>	
0933, 1533, 2133		4280, 6435.55, 8502, 12844.5, 16938, 22384	
0433, 1033,	24-hr surface prognosis	0700, 1100,	Surface analysis
1633, 2233		1950, 2110	
0112, 1147	30-hr surface prognosis	0720, 1120	Significant weather prognosis
1440	48/72-hr surface prognoses	1410	Sea surface temperature and ice analysis
0945, 2037	Wave analysis	1950	Oceanographic forecast
1250, 2350	24-hr wave prognosis	2010	Sea and swell forecast
0001, 1301	48-hr wave prognosis	2050	24/48-hr surface prognoses
1119, 1320	Nephanalysis	Note: Schedule subject to change without notice	
Note: A schedule is transmitted each Thursday at 0922 GMT		3-0110-1	
3-0080-1		STOCKHOLM, SWEDEN (SAY, SMA)	
BRACKNELL, UNITED KINGDOM (GFE)		<i>Area:</i>	
<i>Area:</i>		Northeast Atlantic and Baltic Sea	
Eastern North Atlantic		<i>Frequency (kHz):</i>	
<i>Frequency (kHz):</i>		119.85(0300-1700)	
4782(0000-2400)		4037.5(0000-2400)	
9203(0000-2400)		6901(0000-2400)	
14436(0000-2400)		8077.5(0000-2400)	
2618.5(1800-0600, Oct. 1-Mar.31; 1900-0500 Apr. 1-Sept. 30)		0355, 1013,	Surface analysis
18261(0600-1800 Oct 1-Mar.31; 0500-1900 Apr. 1-Sept. 30)		1555 ¹ 2205	
0333, 0826,	Surface analysis	0735, 1845	18/30-hr surface prognoses
0933, 1533, 2133		0915	30-hr surface prognosis
0433, 1033	24-hr surface prognosis	1100	48-hr surface prognosis
1633, 2233		1130, 1920	Ice Chart (Baltic Sea)
		¹ 90 scans/minute	
		3-0120-1	
		HELSINKI, FINLAND (OFA 83)	
		<i>Area:</i>	
		Baltic Sea	
		<i>Frequency (kHz):</i>	
		83.1, 8018 ¹	

<i>Radio Station, area, frequency, and broadcast time</i>	<i>Contents</i>	<i>Radio station, area, frequency, and broadcast time</i>	<i>Contents</i>
12184(0000-2400)		0705, 1645	24-hr surface prognosis/200 mb prognosis
3713(2100-0700)		1125	48-hr surface prognosis
5206(2000-0800)		1030, 1715	Wave height analysis
12903(0800-2000)		1050	30-hr wave height prognosis
15941.5(0700-2100)		1230	Nephanalysis
0000, 1200	Schedule	1700	Sea surface temperature
¹ U.S. Navy KFAX Broadcast			
3-0170-1		3-0180-1	
MADRID, SPAIN		DAKAR, SENEGAL (6VU/6VY)	
<i>Area:</i>		<i>Area:</i>	
Eastern North Atlantic and Mediterranean Sea		Eastern Atlantic-Equator to 35°N, 35°W to 22.5°E	
<i>Frequency (kHz):</i>		<i>Frequency (kHz):</i>	
3650, 6918.5, 10250		13667.5(0000-2400)	
0410	Surface analysis/300 mb analysis	19750(0830-2000)	
1555	Surface analysis/500 mb analysis	7587.5(2000-0830)	
		0950, 2150	Surface analysis

MEDITERRANEAN SEA

<i>Radio station, area, frequency, and broadcast time</i>	<i>Contents</i>	<i>Radio station, area, frequency, and broadcast time</i>	<i>Contents</i>
3-0190-2		3-0250-2	
ROTA, SPAIN (AOK)		SOFIA, BULGARIA (LZA8)	
Note: Transmitted only on request by U.S. Navy ships		<i>Area:</i>	
Frequency list supplied by station when answering requests		30°N, 20°W; 28°N, 34°E; 64°N, 45°W; 60°N, 63°E	
3-0200-2		<i>Frequency(kHz):</i>	
MADRID, SPAIN		4813	
See 3-0170-1		0430, 1110	Surface analysis ¹
3-0210-2		¹ Transmission speed 90 scans/minute	
PARIS (STE ASSISE), FRANCE		3-0260-2	
See 3-0150-1		ANKARA, TURKEY (YMA)	
3-0220-2		<i>Area:</i>	
ROME, ITALY (IMB)		Mediterranean Sea	
<i>Area:</i>		<i>Frequency(kHz):</i>	
North Atlantic east of 15°W; Mediterranean,		3377(1600-0030)	
Black, and Caspian Seas		4560(0500-1400)	
<i>Frequency (kHz):</i>		6790(0500-1400)	
4777.5(0000-2400)		0520, 1015,	Surface analysis
8146.6(0000-2400)		1620, 2210	
13600(0600-2030)		1200, 2307	24-hr surface prognosis
0450, 1650	Preliminary surface analysis	1225, 2335	36-hr surface prognosis
0625, 1050,	Surface analysis	0620, 1330,	Significant weather prognosis
1825, 2250		2007	
1020	36-hr surface prognosis	0645 ¹	Daily weather bulletin
0350, 1225,	Nephanalysis	1040, 1830	Nephanalysis
1550, 2230		0500, 0725,	Test chart
0410, 1610	Test chart	1600	
3-0230-2		¹ Not on Sunday	
BEOGRAD, YUGOSLAVIA (YZZ)		Note: All transmissions are 90 scans/minute	
<i>Area:</i>		3-0270-2	
Mediterranean Sea		CAIRO, EGYPT (SUU)	
<i>Frequency (kHz):</i>		<i>Area:</i>	
5800(0700-1700)		Mediterranean Sea, Red Sea and waters around	
3520(1700-0700)		Africa, north of 10°S	
0445, 0730,	Surface analysis	<i>Frequency(kHz):</i>	
1030, 1330,		9043(0000-2400)	
1630, 1930,		17365(0645-1845)	
2230		5127(1845-0645)	
0705	24-hr surface prognosis	0530, 1130,	Surface analysis
Notes: 1. All transmissions 90 scans/minute		1730, 2330	
2. Transmissions		0410, 1010,	18-hr surface prognosis
are 1900 c/s above registered frequencies		2210	
		1140, 1610,	24-hr surface prognosis
		2340	
		0030, 0500,	Significant weather prognosis
		1100, 1700	

<i>Radio Station, area, frequency, and broadcast time</i>	<i>Contents</i>	<i>Radio station, area, frequency, and broadcast time</i>	<i>Contents</i>
1340	Nephanalysis		

SOUTH ATLANTIC OCEAN

<i>Radio station, area, frequency, and broadcast time</i>	<i>Contents</i>	<i>Radio station, area, frequency, and broadcast time</i>	<i>Contents</i>
3-0280-3		0300, 1600	Surface analysis
RIO DE JANEIRO, BRAZIL (PWZ)		1900	Surface prognosis
<i>Area:</i>		2000	Significant weather prognosis
South Atlantic - 10°N to 35°S, 10°W to South American Coast		0700, 2145	Nephanalysis
Frequency(kHz): 12025		3-0300-3	
0430, 1700	Surface analysis, Sea surface temperature	PRETORIA, SOUTH AFRICA (ZRO)	
3-0290-3		<i>Area:</i>	
BUENOS AIRES, ARGENTINA (LRO/LRB)		South Atlantic east of 40°W, Indian Ocean west of 80°E	
<i>Area:</i>		Frequency(kHz):	
Area outlined by 48°S, 12°E; 48°S, 132°W; 04°N, 30°W; 04°N, 90°W		4014(1800-0430)	
Frequency(kHz):		7508(0000-2400)	
5185, 10720, 18093		13773(0000-2400)	
		18238(0300-1730)	
		0515, 1000,	Surface analysis
		1545, 1930	

NORTH PACIFIC OCEAN

<i>Radio station, area, frequency, and broadcast time</i>	<i>Contents</i>	<i>Radio station, area, frequency, and broadcast time</i>	<i>Contents</i>
3-0310-4		2000	Surface analysis ^{3 4} Significant weather/sea state analysis ^{3 4} Wind and weather analysis ^{4 5} 36-hr surface prognosis ³ 36-hr sea/swell prognosis ³
EDMONTON, ALTA., CANADA (VFE)		2300	36-hr surface prognosis ^{3 4} 36-hr sea/swell prognosis ^{3 4} Surface analysis ³ Mean wind and weather prognosis ⁵ Mean sea/swell prognosis ⁵
<i>Area:</i>			
Eastern North Pacific			
Frequency(kHz):			
8160, 11615.5, 15770.5			
0144, 0800,	Surface analysis ¹		
1344, 2010			
0351, 0953,	Surface analysis ²		
1550, 2144			
0442, 1640,	36-hr Surface and 500 mb prognoses ¹		
0257, 1457	24 and 36-hr surface prognosis		
1016, 2216	48-hr surface prognosis		
	¹ North America, Atlantic, Arctic, & eastern North Pacific Oceans		
	² Northern Hemisphere		
3-0320-4		3-0330-4	
SAN FRANCISCO, CALIF., U.S.A. (NMC)		LA JOLLA, CALIF., U.S.A. (WWD)	
<i>Area:</i>		<i>Area:</i>	
Eastern North Pacific; South Pacific, Equator-20°S and east of 160°W		(a) 20°S-37°N, east of 160°W	
Frequency(kHz):		(b) 28°N-52°N, east of 141°W	
4344.1, ¹ 8680.1, 12728.1,		(c) 10°S-40°N, east of 160°W	
17149.3 ²		(d) 10°S-30°N, east of 160°W	
0000	Schedule (Monday only)	Frequency (kHz): ¹	
0100	36-hr surface prognosis ^{3 4} 36-hr sea/swell prognosis ^{3 4} Surface analysis ⁴ Mean wind and weather prognosis ^{4 5} Mean sea and swell prognosis ^{4 5}	8644.1	
0520	72/96-hr extended outlook ⁶ Surface analysis ³ Significant weather/sea state prognosis ³	17408.6	(Not used at 1700 GMT)
0700	72/96-hr extended outlook ⁶ Surface analysis ^{3 4} Significant weather/sea state prognosis ^{3 4}	1500 ²	Wind and weather analysis and forecast ³
1500	Mean wind and weather prognosis ⁵	1700 ⁴	Weekly mean sea surface Temperature analysis
1820	Surface analysis ³ Significant weather/sea state prognosis ³ Wind and weather analysis ⁵	2300	Wind and weather analysis and forecast ⁵
		2310	Sea and swell analysis ⁶
		2320 ⁷	Sea surface temperature analysis ⁸
		2320 ⁹	Weekly mean mixed layer depth analysis ¹⁰
			¹ Carrier frequencies; broadcast made on upper sideband

Radio station, area, frequency, and broadcast time	Contents	Radio station, area, frequency, and broadcast time	Contents
² Mon.-Fri, incl. ³ For area a; chart depicts wind direction & speed, position of intertropical convergence zone, cloud cover, areas of severe weather, initial and forecast positions of tropical disturbances ⁴ On Friday, July-October ⁵ For area b, Temperate waters ⁶ For area a ⁷ Thur. only ⁸ For area c, tropical waters ⁹ On Fri. throughout year. ¹⁰ For area d		3980 4516.7 6870 7457 9230 14737, 22425 0245, 0430, Surface analysis ¹ 0845, 1030, 1445, 1630, 2050, 2225 0055 24-hr surface prognosis ² ¹ Transmission speed 60 scans/minute ² Transmission speed 120 scans/minute.	
3-0340-4 HONOLULU, HAWAII, U.S.A. (NPM) <i>Area:</i> North Pacific Ocean <i>Frequency (kHz):</i> 2122(0000-2400) 9440(0000-2400) 13862.5(0000-2400) 4802.5(0600-1800) 16400(1800-0600) 21785(1800-0600) 0000 Schedule ¹ U.S. Navy Fleet Broadcast (HFAX)		3-0380-4 TOKYO, JAPAN, (JMH) <i>Area:</i> Western North Pacific <i>Frequency (kHz):</i> 3622.5, 7305, 9970, 13597, 18220, 22770 0400, 1000, Surface analysis ^{1 2} 1600, 1725, 2000 1100 No. Hemisphere surface analysis ² 0644 24-hr surface prognosis ¹ 0716, 1853 24-hr surface prognosis ³ 0810 Wave analysis ¹ 1020 10-day mean sea surface temperature ^{4 5} 1020 Surface ocean current ^{6 7} 1020 Ice condition chart ⁸ 0054 Radio prediction ⁹ 0521, 1320 ¹⁰ Test chart ² ¹ For area: 38.5°N, 65.5°E; 38.5°N, 145.5°W; 01°S; 112.5°E; 01°S, 167°E ² Prior to chart transmission a 60-second transmission of al- ternating black and white signals at 300 Hz and a 60-second transmission of phasing signal are transmitted ³ For area: 44°N, 94°E; 53°N, 167.5°E; 17.5°N, 115.5°E; 21°N, 153°E ⁴ For area: 50°N, 115°E; 50°N, 180°; 16°N, 115°E; 16°N, 180° ⁵ On 4th, 14th, and 24th of month ⁶ Several local charts ⁷ On 19th of month only ⁸ In season, on 2nd, 7th, 12th, 17th, 22nd, and 27th of month ⁹ On 21st and 22nd of month ¹⁰ 60 scans/minute	
3-0350-4 HONOLULU, HAWAII, U.S.A. (KVM 70) ¹ <i>Area:</i> 25°S-40°N, 160°E-110°W <i>Frequency (kHz):</i> 5037.5, 7770, 9982.5, 11090, 13627.5, 16135, 23331.5 ² 0037, 0716, Surface analysis 1130, 1913 0052, 1315 24-hr surface prognosis 0655, 1130, Test chart 1905, 2310 ¹ Broadcast is broadly beamed to the west. ² Transmissions are on two frequencies only, on basis of two best suited for propagation to the Marshall Islands (2000 nauti- cal miles)		3-0390-4 BANGKOK, THAILAND (HSW) <i>Area:</i> 30°S-50°N, 45°E-160°E <i>Frequency (kHz):</i> 7863, 8070, 17520	
3-0360-4 GUAM, MARIANAS IS. (NPN) ¹ <i>Area:</i> Western North Pacific and eastern Indian Ocean <i>Frequency (kHz):</i> 4975, 7645, 10255, 13807.5, 18620, 23880 0000 Schedule ¹ U.S. Navy Fleet Broadcast(GFAX)			
3-0370-4 KHABAROVSK, U.S.S.R. (RHB/RHO) <i>Area:</i> U.S.S.R. Territory and neighboring Pacific waters <i>Frequency (kHz):</i>			

<i>Radio Station, area, frequency, and broadcast time</i>	<i>Contents</i>	<i>Radio station, area, frequency, and broadcast time</i>	<i>Contents</i>
0500, 1700 3-0400-4 CANBERRA, AUSTRALIA (AXM) <i>Area:</i> Waters south of 10°N, 70°E-150°W. See 3-0440-5	Surface analysis		

SOUTH PACIFIC OCEAN

<i>Radio station, area, frequency, and broadcast time</i>	<i>Contents</i>	<i>Radio station, area, frequency, and broadcast time</i>	<i>Contents</i>
3-0410-5		3-0430-5	
DARWIN, AUSTRALIA (AXI)		GUAM, MARIANA IS. (NPN)	
<i>Area:</i>		See 3-0360-4	
25°N-25°S, 75°E-180°		3-0440-5	
<i>Frequency(kHz):</i>		CANBERRA, AUSTRALIA (AXM)	
5755(0800-2100)		<i>Area:</i>	
7535(0800-2100)		South of 10°N, 70°E-150°W	
10555(0000-2400)		<i>Frequency (kHz):</i>	
15615(2100-0800)		5100, 11030, 13920,	
18060(2100-0800)		19690	
0618, 1135,	Surface analysis ¹	1025, 1818	Surface analysis ¹
1735, 2335		0138, 0835,	Surface analysis ²
0735, 1325,	24-hr significant	1345, 2025	
2018,	weather prognosis ³	1118, 1438,	Surface analysis,
¹ For area: 23°N-23°S, 100°E-180°		2118	So. Hemisphere
² For area: 43°S, 110°E; 36°S, 157°E; 36°N, 142°E; 29°N,		0635, 0938,	24-hr surface prognosis
96°E		1538	
3-0420-5		2218	Significant weather prognosis
HONOLULU, HAWAII, U.S.A. (KVM 70)		¹ For area: 25°N, 100°E; 10°N, 170°W; 40°S, 180°; 25°S,	
See 3-350-4		90°E; 25°N, 100°E	
		² For area 05°S-50°S, 100°E-175°E	

INDIAN OCEAN RED SEA AND PERSIAN GULF

<i>Radio station, area, frequency, and broadcast time</i>	<i>Contents</i>	<i>Radio station, area, frequency, and broadcast time</i>	<i>Contents</i>
3-0450-6		3-0480-6	
PRETORIA, SOUTH AFRICA (ZRO)		CAIRO, EGYPT (5YE)	
See 3-0300-3		See 3-270-2	
3-460-6		3-0490-6	
NAIROBI, KENYA (5YE)		TEHRAN, IRAN (EPD)	
<i>Area:</i>		<i>Area:</i>	
Indian Ocean		58°N, 20°E; 28°N, 85°E; 23°N, 20°E; 08°N, 65°E	
<i>Frequency (kHz)</i>		<i>Frequency (kHz):</i>	
5127(1845-0645)		8715	
9043		0700	Surface analysis
17365(0645-1845)		0730	24-hr surface prognosis
0830, 1645	Surface analysis	Note: Transmission speed 90 scans/minute	
1045, 1730	24-hr Surface prognosis		
1030, 1455	24-hr pressure change analysis	3-0500-6	
1710	Sea, state, surface wind, Significant weather analysis	NEW DELHI, INDIA (ATS/ATP)	
3-0470-6		<i>Area:</i>	
ROTA, SPAIN (AOK)		45°N-25°S, 30°E-125°E	
Note: Transmitted only on request by U.S. Navy ships.		<i>Frequency (kHz):</i>	
Frequency list supplied by station when answering request.		7405(1430-0200)	
See 3-0190-2		14842(0230-1400)	
		18227(0230-1400)	
		0011, 0620,	Surface analysis
		1211, 1820	
		0822, 2022	24-hr surface prognosis

ANTARCTIC

<i>Radio station, area, frequency, and broadcast time</i>	<i>Contents</i>	<i>Radio station, area, frequency, and broadcast time</i>	<i>Contents</i>
3-0510-7		2422.5, 8818(0300, 1700, 1915); 8195, 11147(0315, 1715, 1930)	
ORCADAS (LOK)		Winter	
<i>Area:</i>		2422.5, 4250(0300, 1700, 1915); 2422.5, 6454, 9983(0315, 1715, 1930)	
50°S-Pole, 20°W-90°W		0300, 0315	Surface analysis
<i>Frequency (kHz):</i>		1700, 1715	
Summer			

Section 4-Radioteleprinter

Serial No.	Station and abbreviation	Serial No.	Station and abbreviation
NORTH ATLANTIC		0030..... Miami, Fla. (WBR)	
0020.....	New York, N.Y. (KJFK)	0110.....	Tokyo, Japan (JMG)
0030.....	Miami, Fla. (WBR)	0120.....	Saigon, Viet Nam (XVS)
0040.....	Mobile, Ala. (WLO)	SOUTH PACIFIC	
0050.....	Stockholm, Sweden (SMA)	0130.....	Jakarta, Indonesia (8BB)
0060.....	Kano, Nigeria	0140.....	Wellington, New Zealand (ZLZ,ZLX)
0070.....	Dakar Senegal (6VY,6VU)	0150.....	Canberra, Australia (AXM)
SOUTH ATLANTIC		0160.....	Darwin, Australia (AXI)
0080.....	Pretoria, South Africa (ZRO)	INDIAN OCEAN	
0090.....	Buenos Aires, Argentina (LRB, LRO)	0080.....	Pretoria, South Africa (ZRO)
0100.....	Brasilia, Brazil (PPN9)	00150...	Canberra, Australia (AXM)
NORTH PACIFIC		0170.....	Tananarive, Madagascar (5ST)
0020.....	New York, N.Y. (WSY70)	0181.....	Bigara, Mauritius (3BM)
		0190.....	Saint Denis, Reunion Is. (FZR, FZS)
		0200.....	New Delhi, India (VVD)

SECTION 4

RADIOTELEPRINTER BROADCASTS*Explanatory Notes:*

1. Most radioteleprinter weather transmissions are encoded meteorological data beamed point-to-point for support to national meteorological services. Only transmission schedules of forecasts, warnings, or analyses are listed in this publication.
2. Speed of transmissions: 66 words per minute, except the New York, N.Y. (WSY) broadcasts are 60 words per minute.

NORTH ATLANTIC OCEAN

<i>Radio station, area, frequency, and broadcast time</i>	<i>Contents</i>	<i>Radio station, area, frequency, and broadcast time</i>	<i>Contents</i>
		¹ Code FM 45.D	
4-0020-1		4-0040-1	
NEW YORK, N.Y., U.S.A. (KJFK)		MOBILE, ALABAMA, U.S.A. (WLO)	
<i>Area:</i>		<i>Area:</i> ¹	
North Atlantic		Southwest North Atlantic, Caribbean Sea, and	
<i>Frequency (kHz):</i>		Gulf of Mexico	
Night-4055, 8130		<i>Frequency (kHz):</i>	
Day-12180, 16220, 16280, 23211		8714.5	
0537, 1137	Surface analysis for North	0020, 1120, Forecasts and warnings	
1737, 2337	Atlantic area:	1720	
	10°N-80°N, 35°W-100°W ¹	¹ See figure 3	
0020, 1220	30-hour surface prognosis for	4-0050-1	
	20°N-90°N, 25°W-155°W ¹	STOCKHOLM, SWEDEN (SMA)	
¹ Code FM 45-D		<i>Area:</i>	
4-0030-1		Northern Europe	
MIAMI, FLA., U.S.A. (WBR)		<i>Frequency (kHz):</i>	
<i>Area:</i>		5172.5, 10998	
Broadcast point to 40°S, 30°W-105°W		0840, 1140 Storm/gale warnings;	
<i>Frequency (kHz):</i>		2040 forecasts; ice reports ¹	
4061.5, 8140,		¹ Baltic ice code.	
13624, 18765		4-0060-1	
0500, 1100, Surface weather map for		KANO, NIGERIA	
1700, 2300 United States, Southern		<i>Area:</i>	
	Canada,	25°N-5°S, 3°W-20°E	
	and coastal areas of	<i>Frequency (kHz):</i>	
	the Atlantic ¹	12190	
0515, 1715 36-hour forecast for		5155 (1800-0600)	
	eastern Caribbean	17535 (0600-1800)	
0630, 1830 Tropical analysis and discussion		1130 Surface analysis	
	for equator-30°N, 50°W-	4-0070-1	
	110°W.	DAKAR, SENEGAL (6VY, 6VU)	
	Geographical coordinates in	<i>Area:</i>	
	form Q La La Lo Lo	Equator-35°N, 22.5°E-35°W	
0845 48-hour surface prognosis for		<i>Frequency (kHz):</i> ¹	
	20°N-60°N, 50°W-145°W ¹	4784, 10380, 13667.5,	
		19750 (0000-2400);	
		7616 (1800-0830)	
		0930-1030 Surface analysis ²	
		1230-1330 24-hour forecast	
		1530-1630 Surface analysis ²	
		2130-2230 Surface analysis ²	
			24-hour forecast
		¹ Transmissions are centered 2.55 Hz below listed frequencies	
		² Code FM 45.D	

SOUTH ATLANTIC OCEAN

<i>Radio station, area, frequency, and broadcast time</i>	<i>Contents</i>	<i>Radio station, area, frequency, and broadcast time</i>	<i>Contents</i>
4-0080-3		<i>Area:</i>	
PRETORIA, SOUTH AFRICA (ZRO)		Broadcast beamed to Central America and South Africa	
<i>Area:</i>		<i>Frequency (kHz):</i>	
South of equator between 20°W and 20°E; south of 10°S between 20°E and 80°E.		5185, 10720, 18093	
<i>Frequencies (kHz):</i> ¹		0345-0620	Surface analysis
4016 (0200-0430, 1730-2030)			Surface prognosis
7410 (0200-0800, 1430-2030)		1545-1630	Surface analysis
13775 (0200-2030)		1820-2100	Surface prognosis
18240 (0200-2030)			
0840-0900	Surface analysis	4-0100-3	
1440	Surface analysis forecast	BRASILIA, BRAZIL (PPN 9)	
		<i>Area:</i>	
¹ Transmissions are centered 1900 Hz above listed frequencies		South Atlantic	
4-0090-3		<i>Frequency (kHz):</i>	
BUENOS AIRES, ARGENTINA (LRB, LRO)		10225, 18080	
		0430, 1800	Surface prognosis
		1630, 1930	Surface analysis

NORTH PACIFIC OCEAN

<i>Radio station, area, frequency, and broadcast time</i>	<i>Content:</i>	<i>Radio station, area, frequency, and broadcast time</i>	<i>Contents</i>
4-0110-4		1600-1700	Surface analysis ¹
TOKYO, JAPAN (JMG)		2100-2200	Warnings and synopsis
<i>Area:</i>		2200-2300	Surface analysis ¹
Equator - 60°N, 95°E-175°W		¹ Code FM 45.D	
Frequency (kHz):		4-0130-4	
3670, 5102.5,		JAKARTA, INDONESIA (8BB)	
7402.5, 14880, 19529, 22728		<i>Area:</i>	
0300-0400	Warnings and Synopsis	10°S-10°N, 90°E-145°E	
0400-0500	Surface analysis ¹	Frequency (kHz):	
0900-1000	Warnings and synopsis	11500, 16200	
1000-1100	Surface analysis ¹	0645, 1245,	Warnings
1500-1600	Warning and synopsis		

SOUTH PACIFIC OCEAN

<i>Radio station, area, frequency, and broadcast time</i>	<i>Contents</i>	<i>Radio station, area, frequency, and broadcast time</i>	<i>Contents</i>
4-0140-5		Frequency (kHz):	
WELLINGTON, NEW ZEALAND (ZLZ, ZLX)		5100, 11030, 13920	
<i>Area:</i>		(0000-2400);	
5°N-55°S, 140°E-140°W		19690, 27750 (2200-1000)	
Frequency (kHz):		0400-0430	Surface analysis ¹
5915 (0400-2000, ¹ 0800, 2000 ²)		1500-1530	do.
7600		2100-2115	do.
11130		¹ Code FM 45.D.	
14850		4-0160-5	
19488 (2000-0400, ¹ 2000-0800 ²)		DARWIN, AUSTRALIA (AXI)	
0540, 1730	Surface analysis	<i>Area:</i>	
¹ March-November		8°S-25°S, 75°E-180°	
² December-February		Frequency (kHz):	
4-0150-5		5755 (0800-2100)	
CANBERRA, AUSTRALIA (AXM)		7535 (0800-2100)	
<i>Area:</i>		10555 (0000-2400)	
Equator southward, 90°E-170°W		15615 (2100-0800)	
		18060 (2100-0800)	
		0100, 0700	Warnings

INDIAN OCEAN

<i>Radio station, area, frequency, and broadcast time</i>	<i>Contents</i>	<i>Radio station, area, frequency, and broadcast time</i>	<i>Contents</i>
4-0170-6		SAINT DENIS, REUNION IS. (FZR, HXP, FZS)	
TANANARIVE, MADAGASCAR (SST)		<i>Area:</i>	
<i>Area:</i>		05°S-55°S, 40°E-100°E	
Equator-40°S, 20°E-80°E		<i>Frequency (kHz):</i>	
<i>Frequency (kHz):</i>		4440, 8176, 16335	
4525 (0000-2400)		0900-1200	Surface analysis ¹
7552 (0000-2400)		¹ Code FM 46.D	
17400(0000-2400)		4-0200-6	
2614 (2100-0200)		NEW DELHI, INDIA (VVD)	
0935	Surface analysis	<i>Area:</i>	
4-0181		Equator-40°N, 45°E-100°E	
BIGARA, MAURITIUS (3BM)		<i>Frequency (kHz):</i>	
<i>Area:</i>		7580, 12075 (0000-2400)	
Reunion and all countries of Southwest Indian		3192.5 (1430-0040)	
Ocean including Seychells.		19400 (0040-1400)	
0930	12988.5	0605	Surface analysis ¹
	16978.4	0445, 0755,	Warnings
4-0190-6		1015, 1645	
		¹ Code FM 46.D	

SECTION 5

WEATHER BROADCASTS FOR GREAT LAKES

NOAA WEATHER RADIO (VHF-FM)
CONTINUOUS WEATHER BROADCASTS

CONTINUOUS VHF-FM WEATHER BROADCASTS

NOAA WEATHER RADIO

The National Weather Service provides continuous weather broadcasts to mariners within listening range of its VHF-FM radio stations in many coastal locations. These line-of-sight transmissions can be received up to 40 miles from the antenna site depending on terrain and type of receiver. Where antennas are on hills or mountains the range may extend 100 miles or more. These voice broadcasts are taped, and they repeat every 4 to 6 minutes. The tapes are up-dated periodically, usually every 2 to 3 hours, and amended as required to include the latest information.

Broadcasts include local and area warnings and forecasts, radar summaries, observations, sea conditions, and harbor water levels where available. When severe weather warnings are issued, routine transmissions are interrupted and the broadcast given over to emergency warning operations.

Following is a list of the continuous weather broadcasts:

<i>Location</i>	<i>Call Sign</i>	<i>Freq (MHz)</i>
ATLANTIC AND GULF OF MEXICO COASTS		
Me. Ellsworth	KEG-93	162.40
Me. Portland	KDO-95	162.55
Mass. Boston	KHB-35	162.40
Mass. Hyannisport (Cape Cod)	KEC-73	162.55
RI. Providence	WXJ-39	162.40
Conn. New London	KHB-47	162.40
N.Y. New York	KWO-35	162.55
N.J. Atlantic City	KHB-38	162.40
D.C. Washington	KHB-36	162.55
Md. Baltimore	KEC-83	162.40
Md. Salisbury (Eden)	KEC-92	162.40
Va. Norfolk	KHB-37	162.55
N.C. New Bern	KEC-84	162.40
N.C. Cape Hatteras	KIG-77	162.55
N.C. Wilmington	KHB-31	162.55
S.C. Myrtle Beach	KEC-95	162.40
S.C. Charleston	KHB-29	162.55
S.C. Beaufort	WXJ-23	162.475
Ga. Savannah	KEC-85	162.40
Fla. Jacksonville	KHB-39	162.55
Fla. Daytona Beach	KIH-26	162.40
Fla. West Palm Beach	KEC-50	162.40
Fla. Miami	KHB-34	162.55
Fla. Key West	KIH-25	162.40
Fla. Tampa	KHB-32	162.55
Fla. Tallahassee	KIH-24	162.40
Fla. Panama City	KGG-67	162.55
Fla. Pensacola	KEC-86	162.40
Ala. Mobile	KEC-61	162.55
Miss. Gulfport	KIH-21	162.55
La. New Orleans	KHB-43	162.55
La. Lake Charles	KHB-42	162.55
La. Morgan City	KIH-23	162.55
La. Baton Rouge	KHB-46	162.40
Tex. Galveston	KHB-40	162.55
Tex. Houston	KGG-68	162.40
Tex. Corpus Christi	KHB-41	162.55
Tex. Brownsville	KHB-33	162.55

PACIFIC COAST AND ALASKA

Alaska	Ketchikan	WXJ-26	162.55
Alaska	Juneau	WXJ-25	162.55
Alaska	Homer	WXJ-24	162.40
Alaska	Anchorage	KEC-43	162.55
Alaska	Steward (0630-2000 Local Time)	KEC-81	162.55
Wash.	Neah Bay	KIH-36	162.55
Wash.	Seattle (Antenna on Green Mt. near Bremerton)	KHB-60	162.55
Oreg.	Newport	KIH-33	162.55
Oreg.	Astoria	KEC-91	162.40
Oreg.	Brookings	KIH-37	162.55
Oreg.	Portland (Antenna in West Portland Hills)	KIG-98	162.55
Calif.	Eureka (Antenna on Mt. Pierce)	KEC-82	162.40
Calif.	Point Arena	KIH-30	162.40
Calif.	San Francisco (Antenna on Mt. Pise)	KHB-49	162.55
Calif.	Sacramento (Antenna on Jackson Butte)	KEC-57	162.40
Calif.	Monterey (Antenna near Almaden)	KEC-49	162.40
Calif.	Los Angeles (Antenna on Mt. Wilson)	KWO-37	162.55
Calif.	San Diego (Antenna on Mt. Woodson)	KEC-62	162.40

HAWAIIAN ISLANDS

Oahu (On Mt. Kaala, 4060 ft. m.s.l.)	KBA-99	162.55
Kauai (Kokee, 3750 ft. m.s.l.)	KBA-99	162.40
Maui (On Mt. Haleakala, 10025 ft. m.s.l.)	KBA-99	162.40
Hawaii (On Kulani Cone, 5500 ft. m.s.l.)	KBA-99	162.55

GREAT LAKES

N.Y.	Rochester	KHA-53	162.40
N.Y.	Buffalo	KEB-98	162.55
Pa.	Erie	KEC-58	162.40
Ohio	Akron	KDO-94	162.40
Ohio	Cleveland	KHB-59	162.55
Ohio	Sandusky	KHB-97	162.40
Mich.	Detroit	KEC-63	162.55
Mich.	Clio	KIH-29	162.40
Mich.	Alpena	KIG-83	162.55
Mich.	Sault Ste. Marie	KIG-74	162.55
Wisc.	Green Bay	KIG-65	162.55
Mich.	Grand Rapids	KIG-63	162.55
Wisc.	Milwaukee	KEC-60	162.40
Ill.	Chicago	KWO-39	162.55
Mich.	Marquette	KIG-66	162.55
Minn.	Duluth	KIG-64	162.55
Mich.	Traverse City	KIH-22	162.475

GREAT LAKES WEATHER BROADCASTS

SCHEDULED WEATHER BROADCASTS

CODED FORECASTS (MAFOR)

(Year Round Schedule)

These coded forecasts contain Gale and Storm Warnings when they are in effect. The forecasts are prepared by National Weather Service Forecast Offices in Chicago (Lakes Superior and Michigan), Detroit (Lakes Huron and St. Clair), Cleveland (Lake Erie), and Buffalo (Lake Ontario).

<i>City</i>	<i>Radio Station</i>	<i>Freq. (channel)</i>	<i>Time (E.S.T.)</i>
Lorain, OH	WMI	26, 57, 82, 96	6:02 and 12:02 a.m. and p.m. (Ch. 96 not used at 12:02 a.m.)
Rogers City, MI	WLC	26, 57, 82	6:12 and 12:12 a.m. and p.m. (Ch. 96 not used at 12:12 and 6:12 a.m.)
Tawas City, MI (Slave Station)	WLC	26	do.
Charlevoix, MI (Slave Station)	WLC	26	do.
Sturgeon Bay, WI	KVY-604	87	6:02 and 12:02 a.m. and p.m.
Port Washington, WI	WAD	85	do.
Grand Marais, MI	KVY-603	28	6:02 and 12:02 a.m. and p.m.
Copper Harbor, MI	KVY-602	84	do.
Duluth, MN	WAS	26	do.

GREAT LAKES WEATHER DATA BROADCASTS (LAWEB)

U.S. and Canadian Ship and coastal observations are broadcast by radiotelephone at 2:30 and 8:30 a.m. and p.m. E.S.T.

<i>City</i>	<i>Station</i>	<i>Frequency (channel)</i>
Lorain, OH.....	WMI	26, 57, 82, 96*
Sturgeon Bay, WI.....	KVY-604	87
Port Washington, WI.....	WAD	85
Grand Marais, MI.....	KVY-603	28
Copper Harbor, MI.....	KVY-602	84
Duluth, MN.....	WAS	26

* Ch. 96 not used at 2:30 a.m. after Oct. 1

The LAWEB contains plain language reports of wind direction and speed (in knots) and wave heights from shore stations in the Lake Region and ships underway on the Lakes. Ships' positions are given in distance in miles and direction from well-known landmarks; visibility and weather are included in all reports when visibility is less than 5/8 of a mile. Observations are taken 1 1/2 hours prior to the time of broadcast. Broadcast material is compiled by National Weather Service Forecast Office, Cleveland.

GALE AND STORM WARNING BROADCASTS

COMMERCIAL MARINE RADIO STATIONS

All warnings are broadcast on Channel 16; Rogers City, MI (WLC) and Buffalo, NY (WBL) also broadcast warnings on Channel 51. Warnings are transmitted on receipt and at 2-hour intervals thereafter for a period of 5 hours, unless superceded or cancelled.

<i>City</i>	<i>Station</i>	<i>Broadcast Times (E.S.T.)</i>
Lorain, OH.....	WMI	On receipt and odd HH035
Rogers City, MI.....	WLC	On receipt and even HH045
Tawas City, MI.....	WLC	do.
(Slave)		
Charlevoix, MI.....	WLC	do.
(Slave)		
Sturgeon Bay, WI.....	KVY-604	On receipt and odd HH035
Port Washington, WI.....	WAD	do.
Grand Marais, MI.....	KVY-603	On receipt and odd HH035
Copper Harbor, MI.....	KVY-602	do.
Duluth, MN.....	WAS	do.

GALE AND STORM WARNING BROADCASTS

U.S. COAST GUARD RADIO STATIONS

On receipt of a message, announcement is made on Channel 16, followed by broadcast of the message on Channel 22.

<i>City</i>	<i>Station</i>	<i>Broadcast Times (E.S.T.)</i>
Alexandria Bay, NY	NMD-35	On receipt and next odd HH035
Buffalo, NY*	NMD-47	On receipt and next regular broadcast
Sault Ste. Marie, MI	NOG	On receipt and next regular broadcast
Muskegon, MI	NMD-32	On receipt and next odd HH055
Milwaukee, WI	NMP-9	On receipt and next regular broadcast
Duluth, MN	NOG-14	do.
Detroit, MI	NMD-25	do.

RADIO FREQUENCY CHANNEL DESIGNATORS

Ch. 16 - 156.8 MHz	Ch. 22 - 157.1 MHz	Ch. 26 - 161.9 MHz	Ch. 28 - 162.0 MHz
Ch. 51 - 2182 kHz	Ch. 56 - 2670 kHz	Ch. 57 - 2514 kHz	Ch. 82 - 4415.8 kHz
Ch. 96 - 8783.2 kHz	Ch. 84 - 161.825 MHz	Ch. 85 - 161.875 MHz	Ch. 87 - 161.975 MHz

FIGURES (Marine Weather Forecast Areas)

FIGURE 1	NORTHEASTERN COAST OF CANADA
FIGURE 2	CANADA - ATLANTIC COAST
FIGURE 3	UNITED STATES ATLANTIC AND GULF COASTS
FIGURE 3a	SENEGAL
FIGURE 4	EASTERN NORTH ATLANTIC
FIGURE 4a	FRANCE
FIGURE 5	MEDITERRANEAN SEA
FIGURE 6	EGYPT
FIGURE 7	BRAZIL
FIGURE 7a	ARGENTINA
FIGURE 8	ANGOLA
FIGURE 9	PORTUGUESE WEST AFRICA AND SOUTH AFRICA
FIGURE 10	ALASKA
FIGURE 11	CANADA - PACIFIC COAST
FIGURE 12	UNITED STATES - PACIFIC COAST
FIGURE 13	WESTERN NORTH PACIFIC
FIGURE 14	SOUTHEAST ASIA
FIGURE 15	THAILAND
FIGURE 16	CHILE
FIGURE 17	FRENCH POLYNESIA
FIGURE 18	NEW CALEDONIA
FIGURE 19	AUSTRALIA
FIGURE 19a	AUSTRALIA
FIGURE 20	INDIAN OCEAN
FIGURE 21	MADAGASCAR
FIGURE 22	KENYA
FIGURE 23	INDIA AND PAKISTAN
FIGURE 24	ANTARCTIC

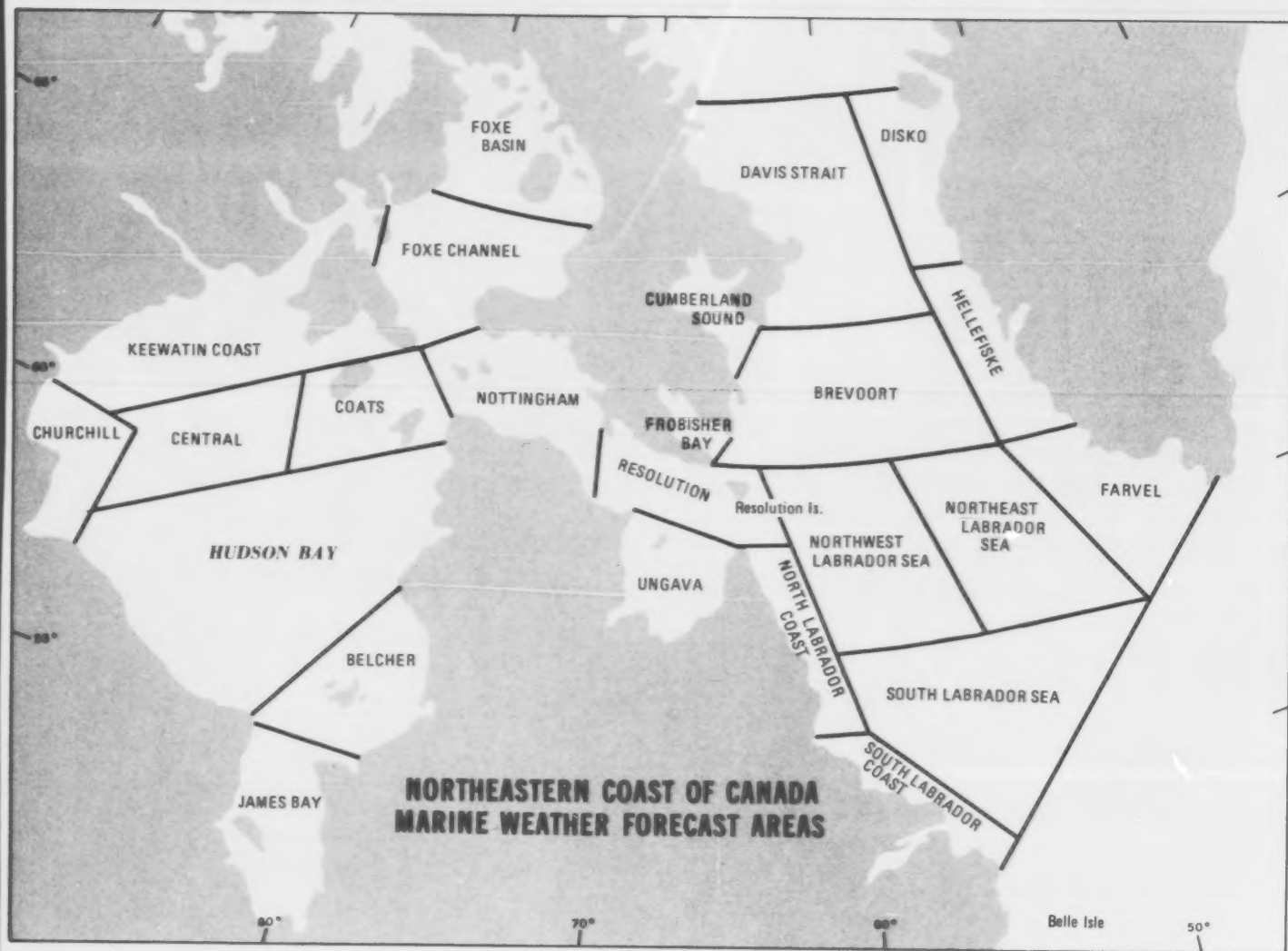


FIGURE 1

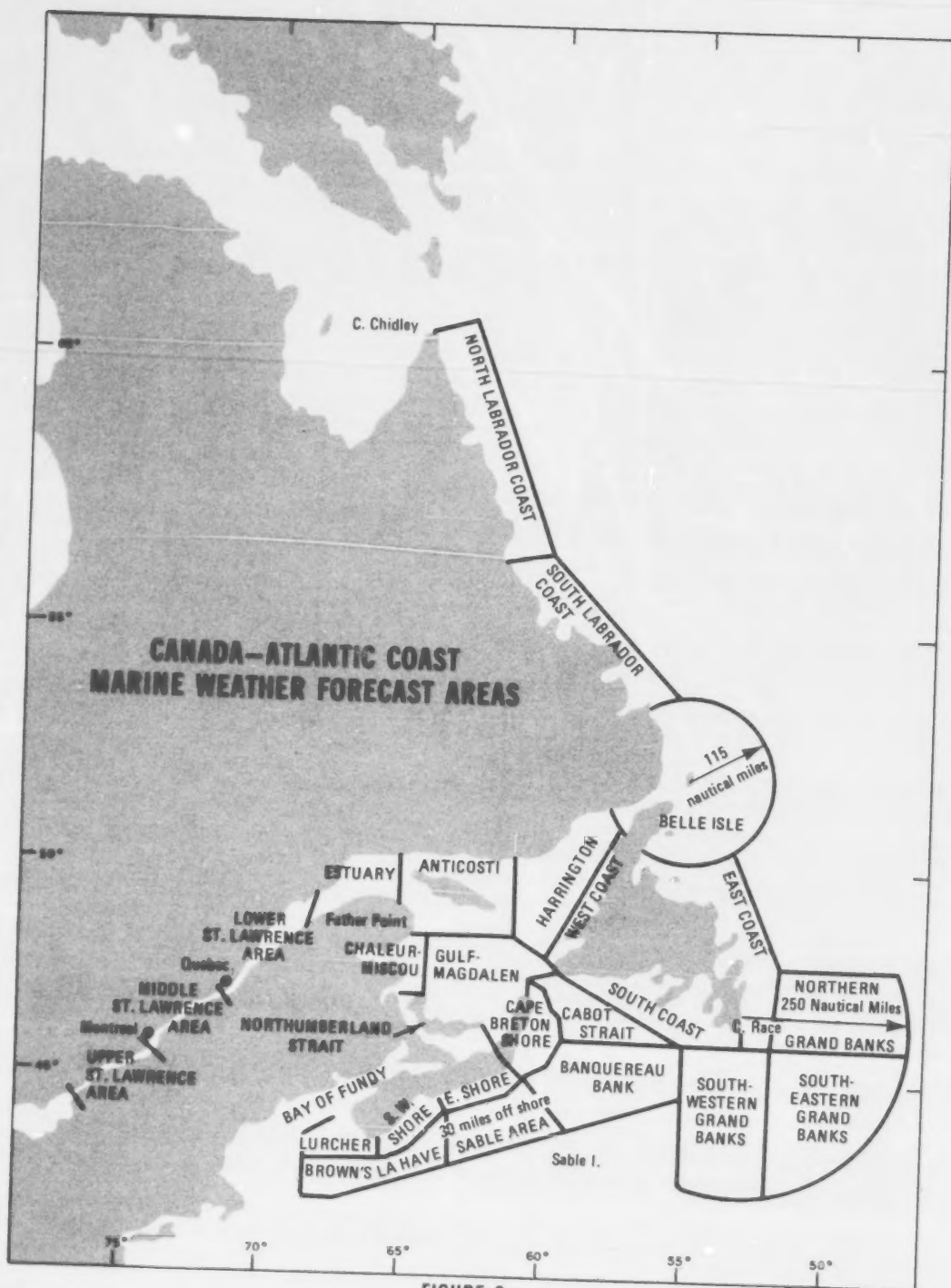


FIGURE 2

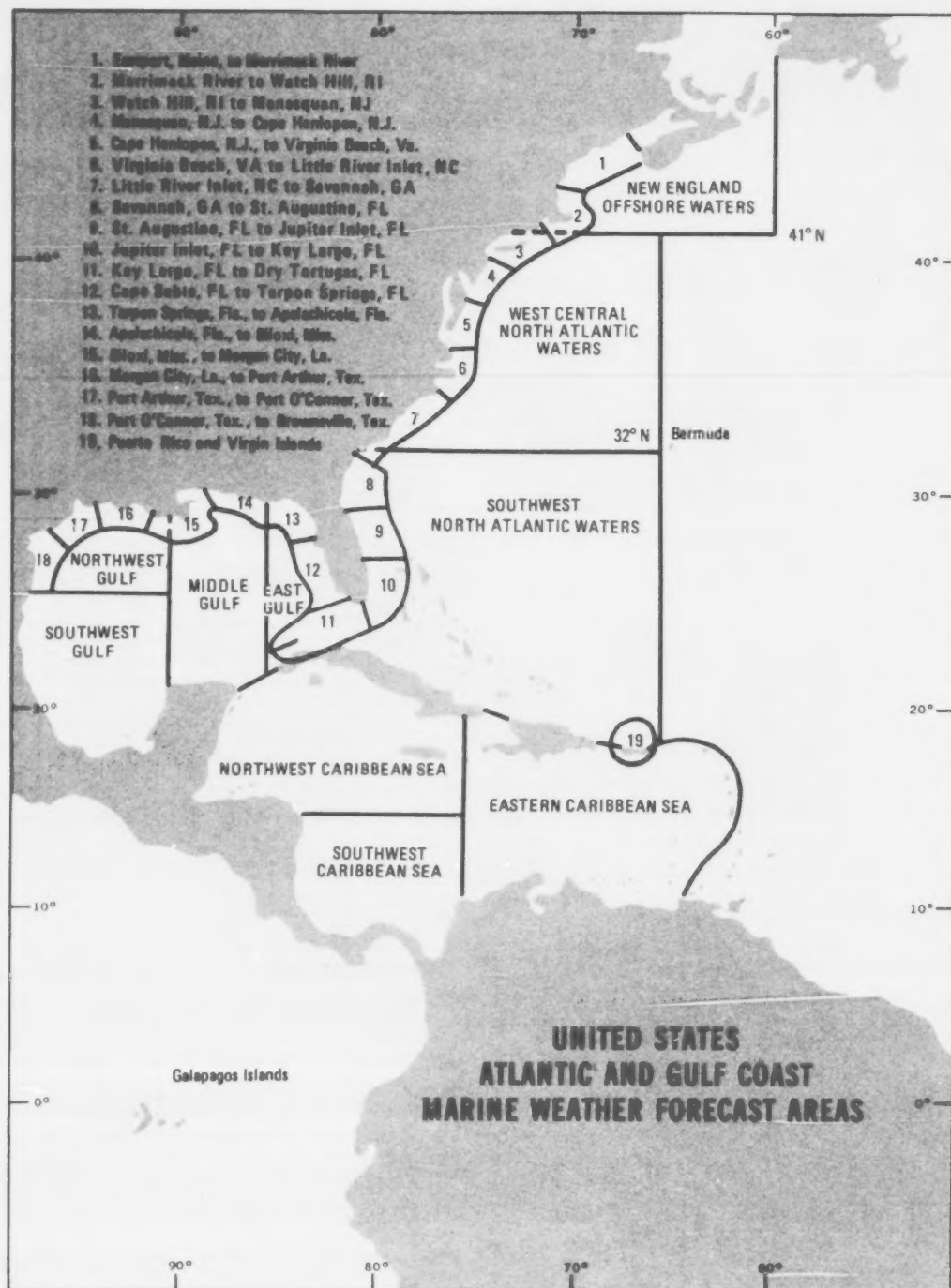


FIGURE 3

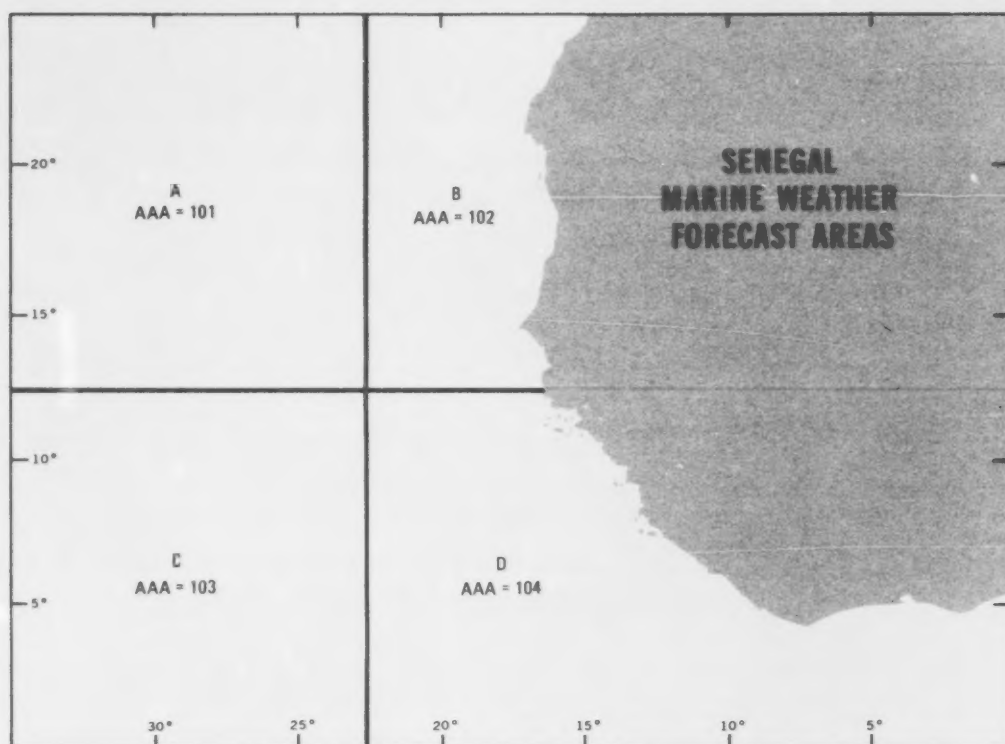


FIGURE 3A

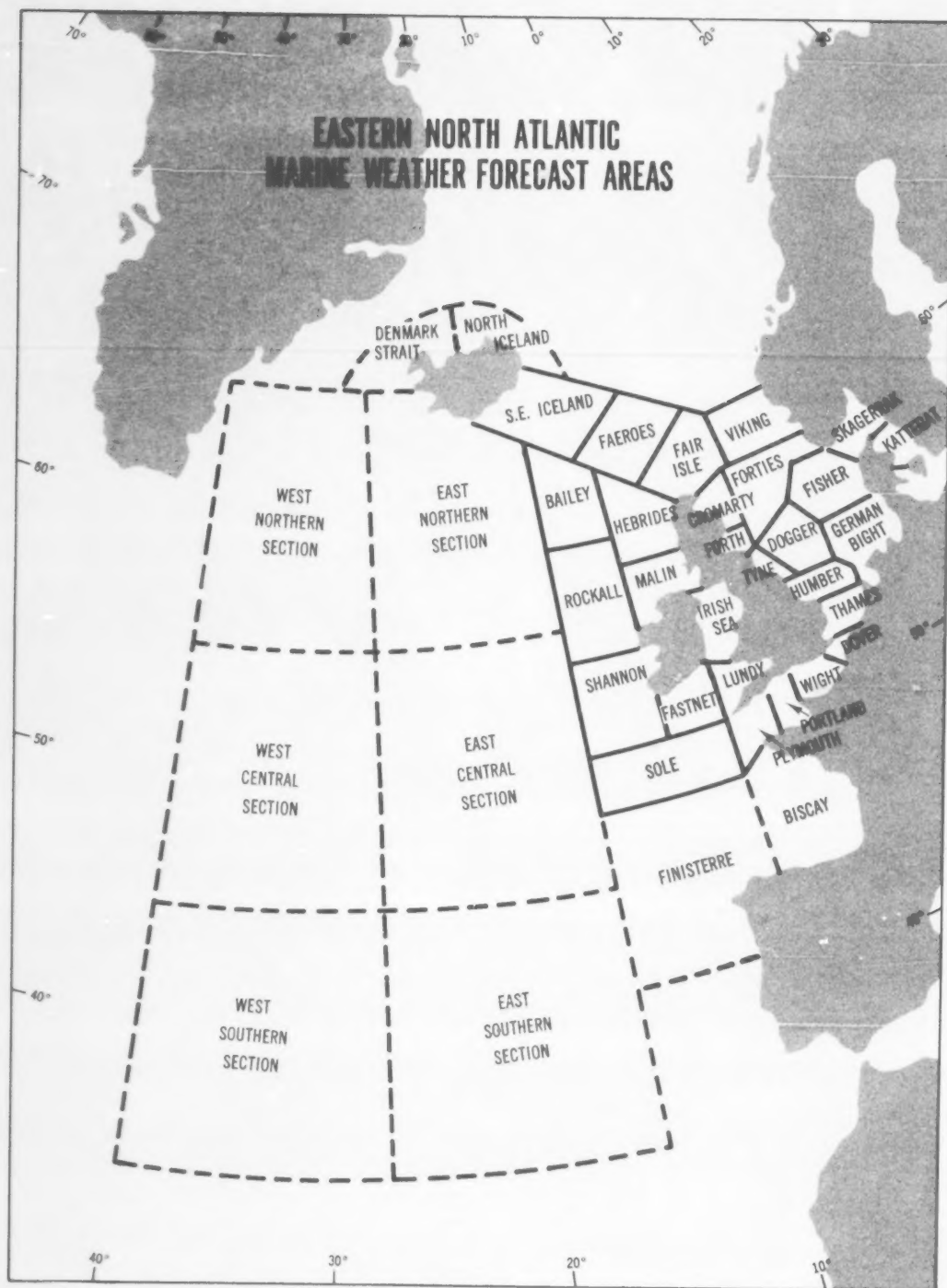


FIGURE 4

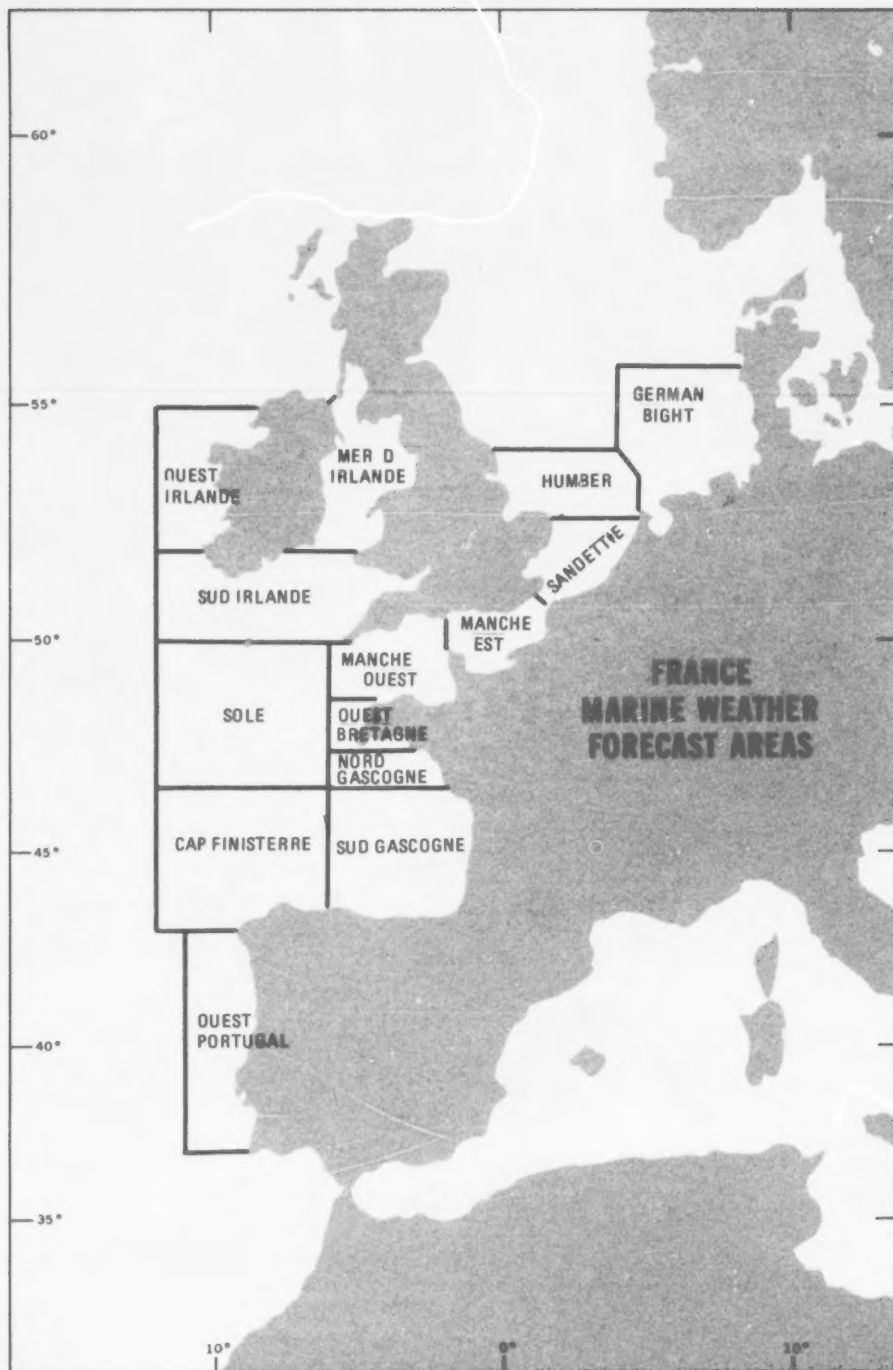


FIGURE 4A

21

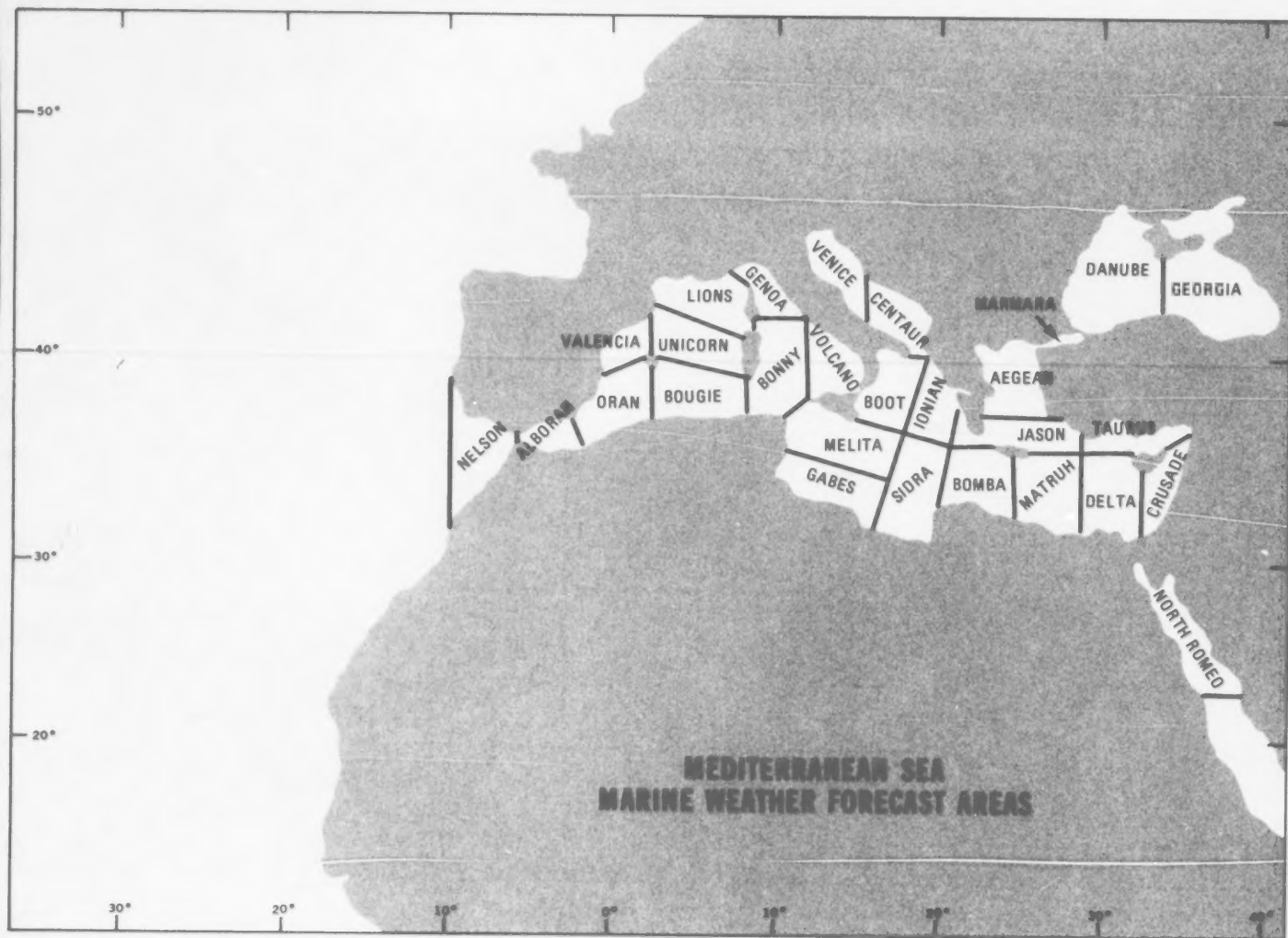


FIGURE 5

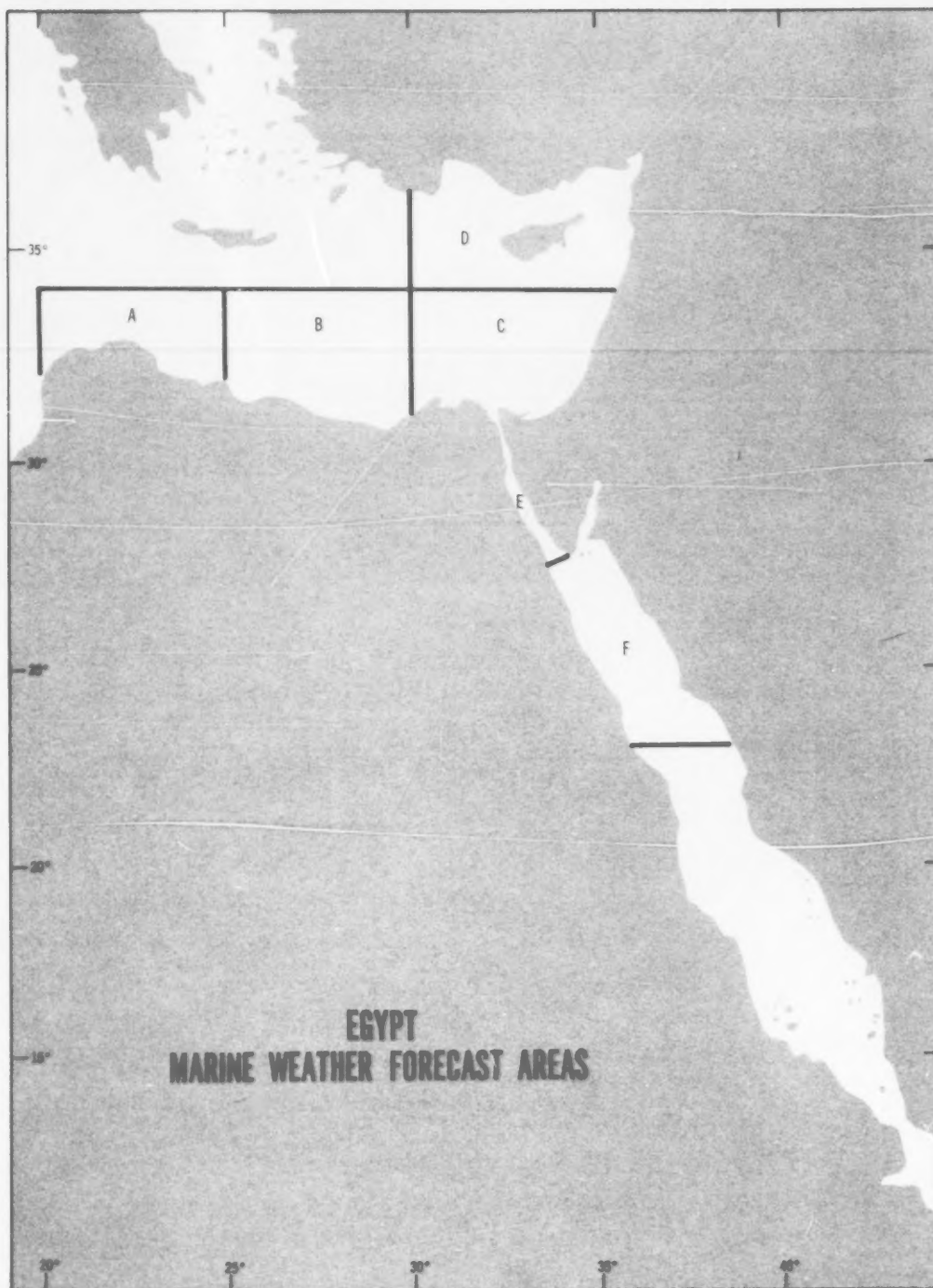


FIGURE 6

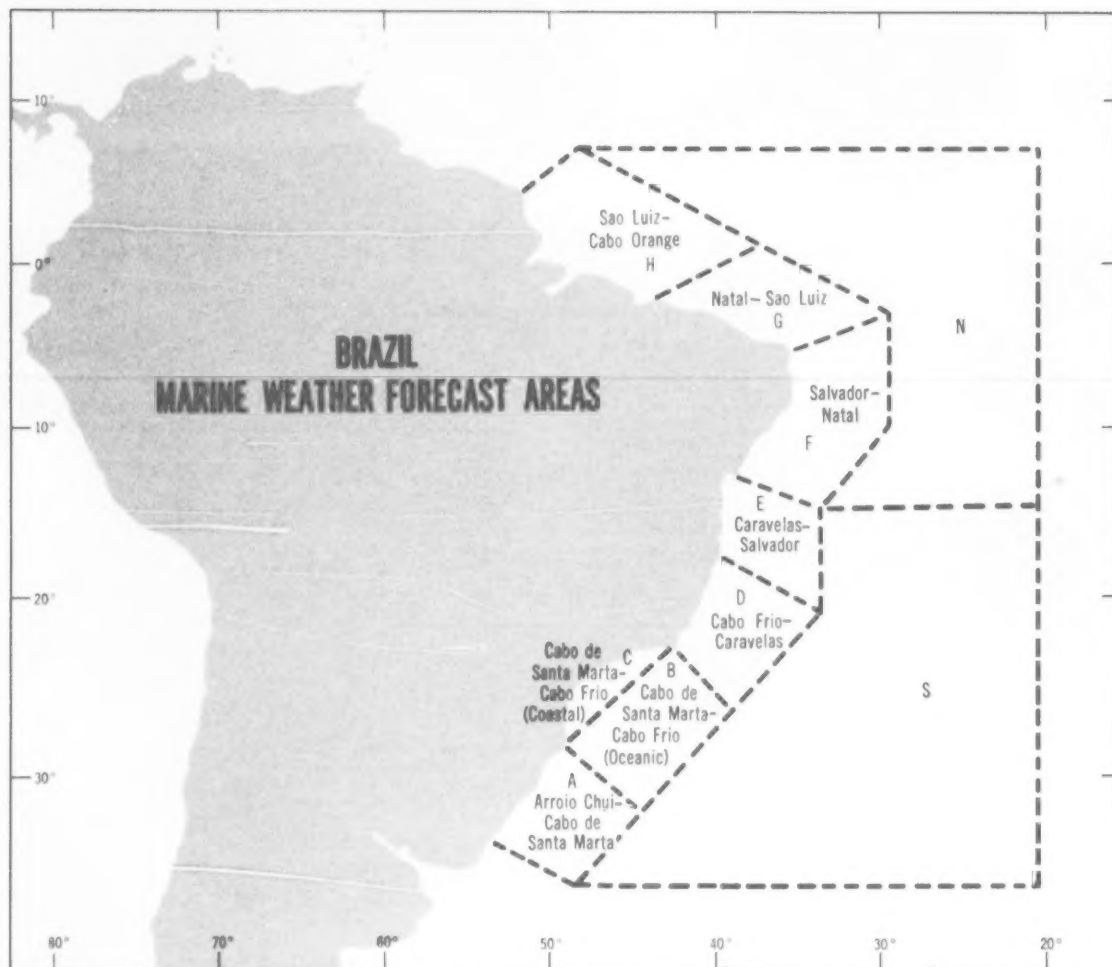


FIGURE 7

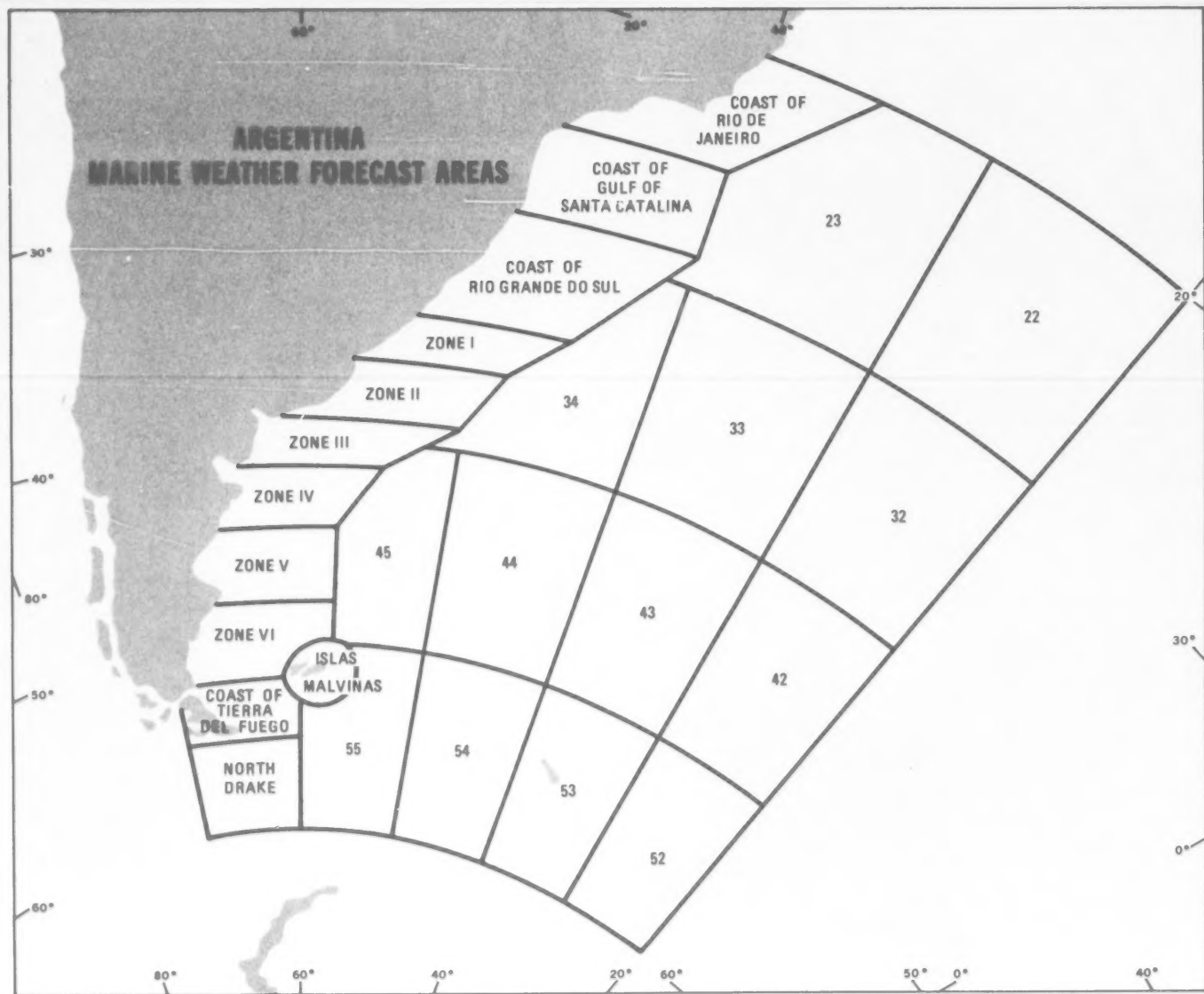


FIGURE 7A

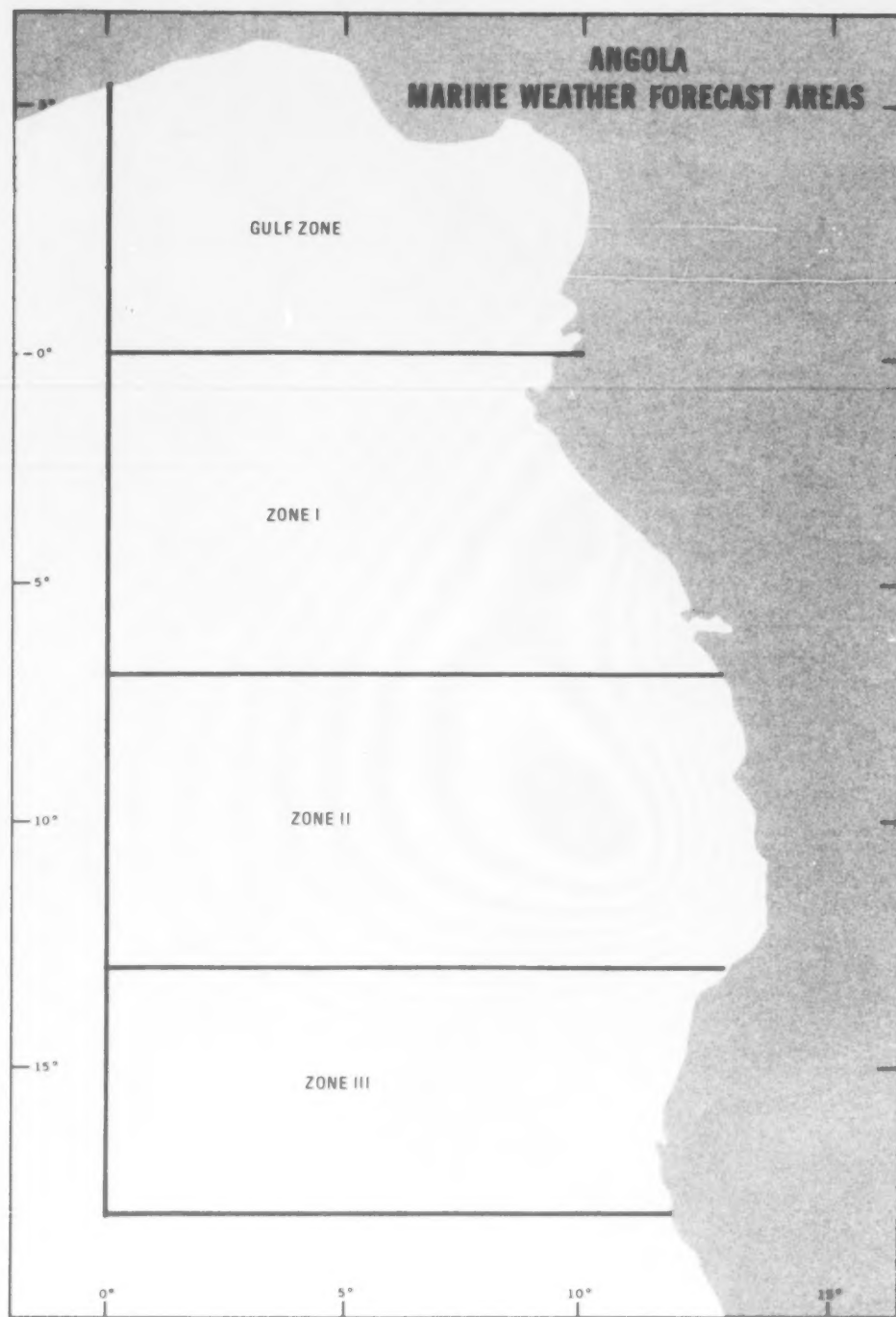
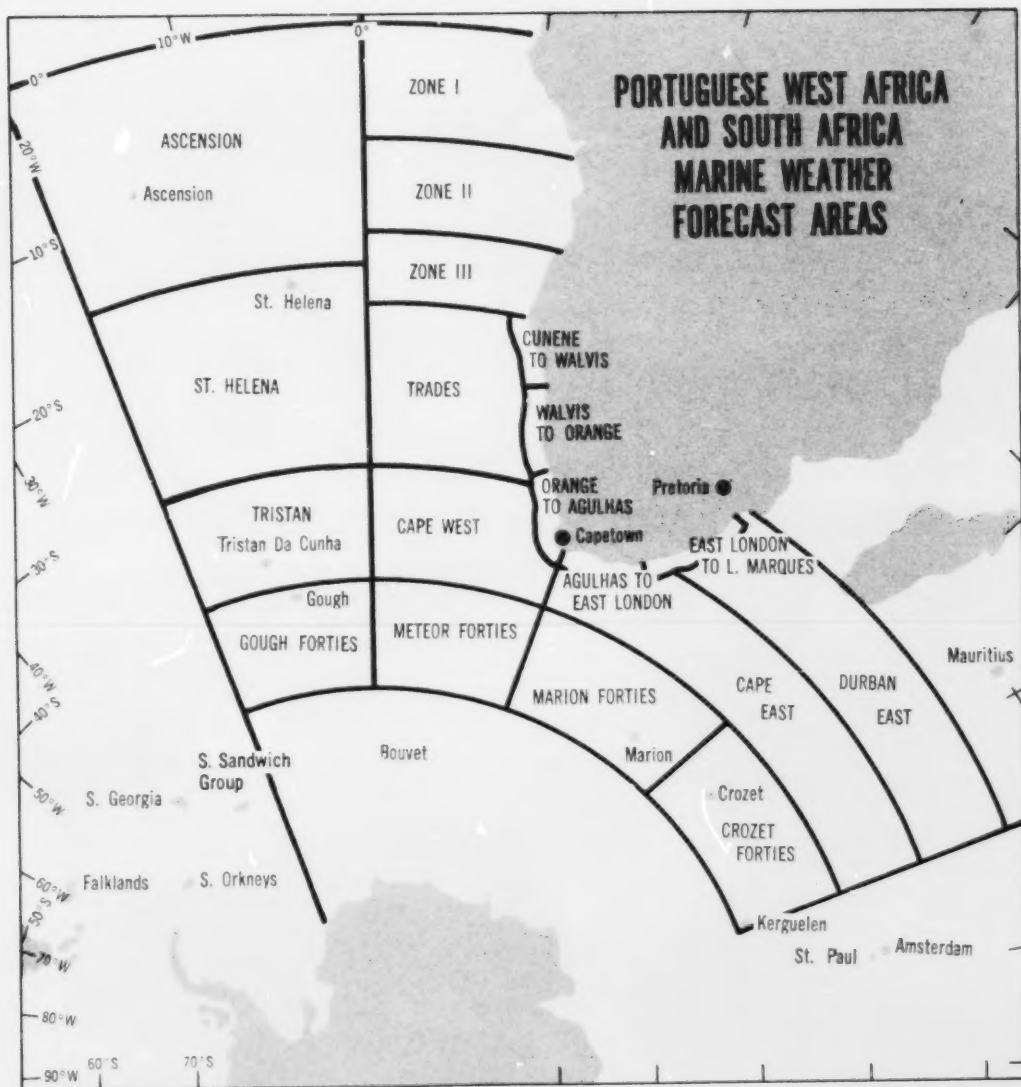


FIGURE 8



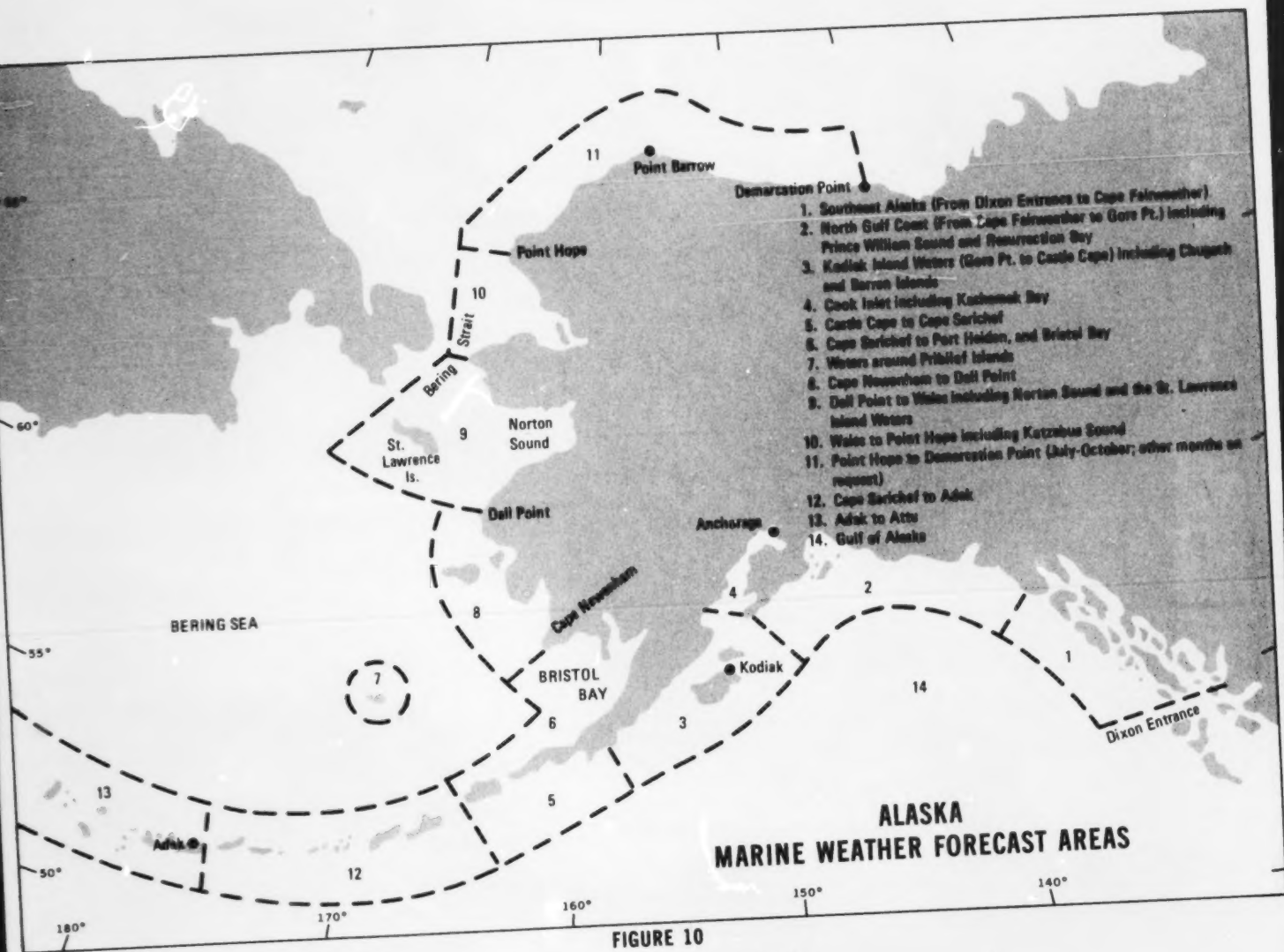


FIGURE 10

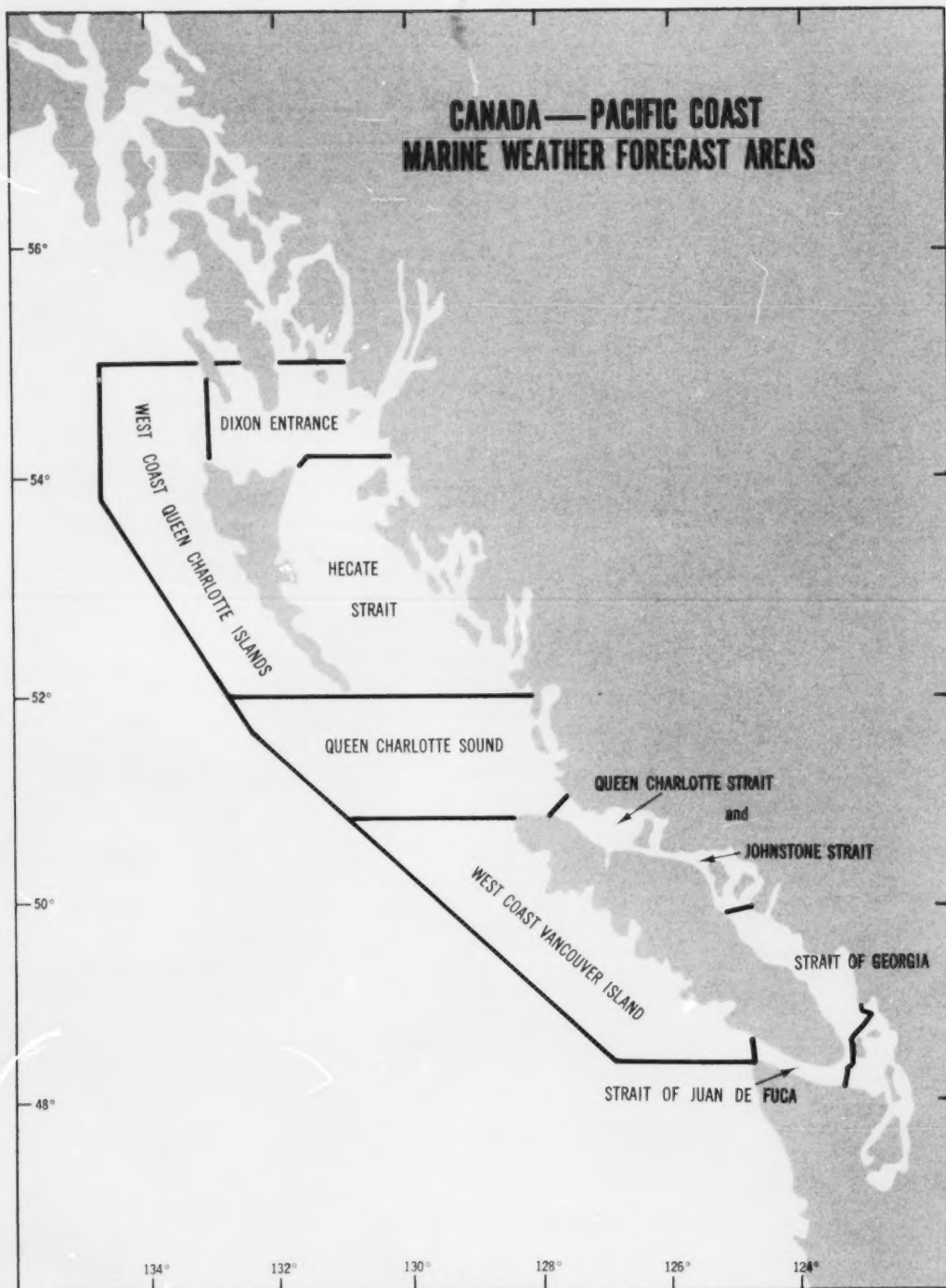


FIGURE 11

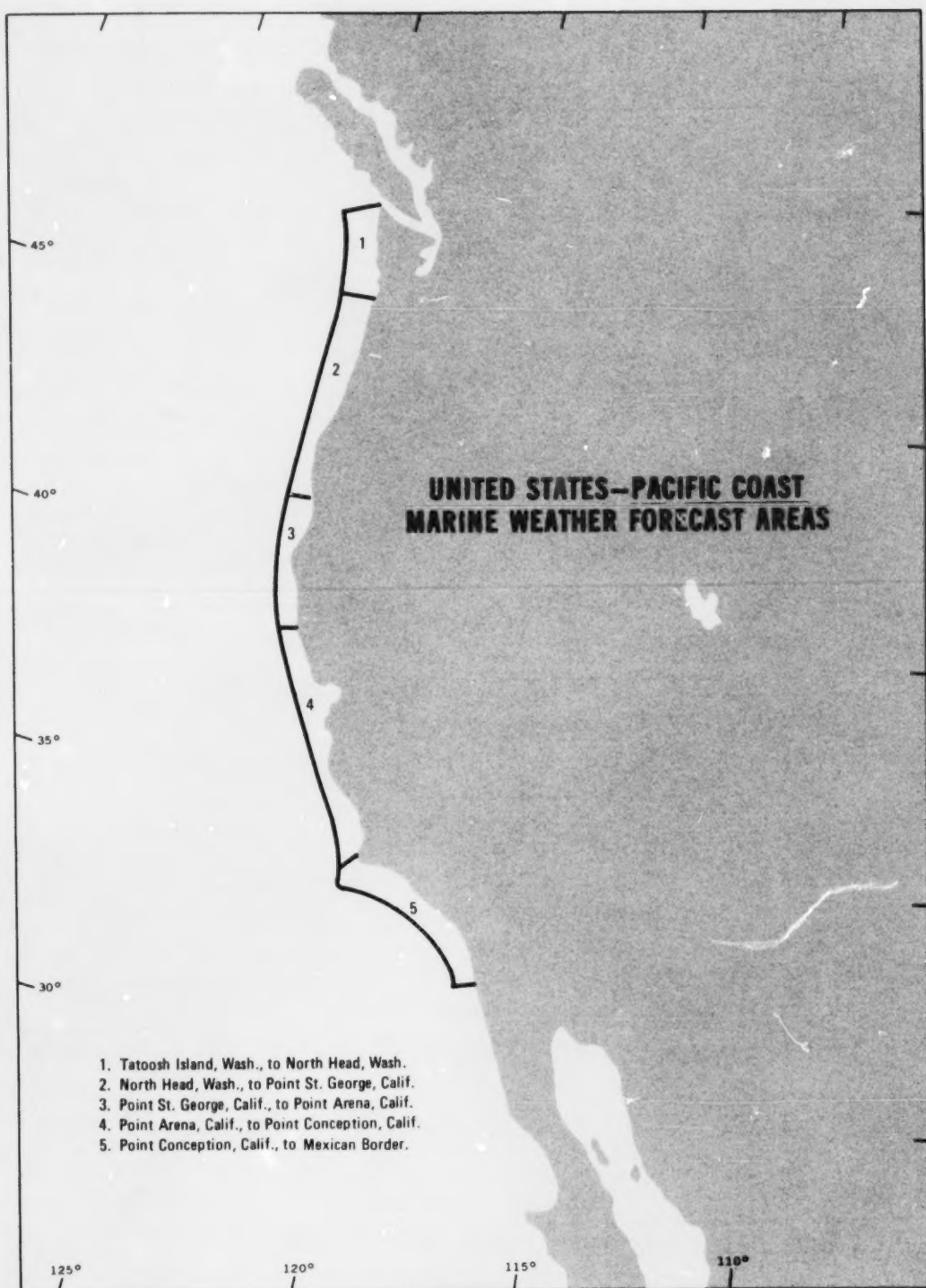


FIGURE 12

WESTERN NORTH PACIFIC MARINE WEATHER FORECAST AREAS

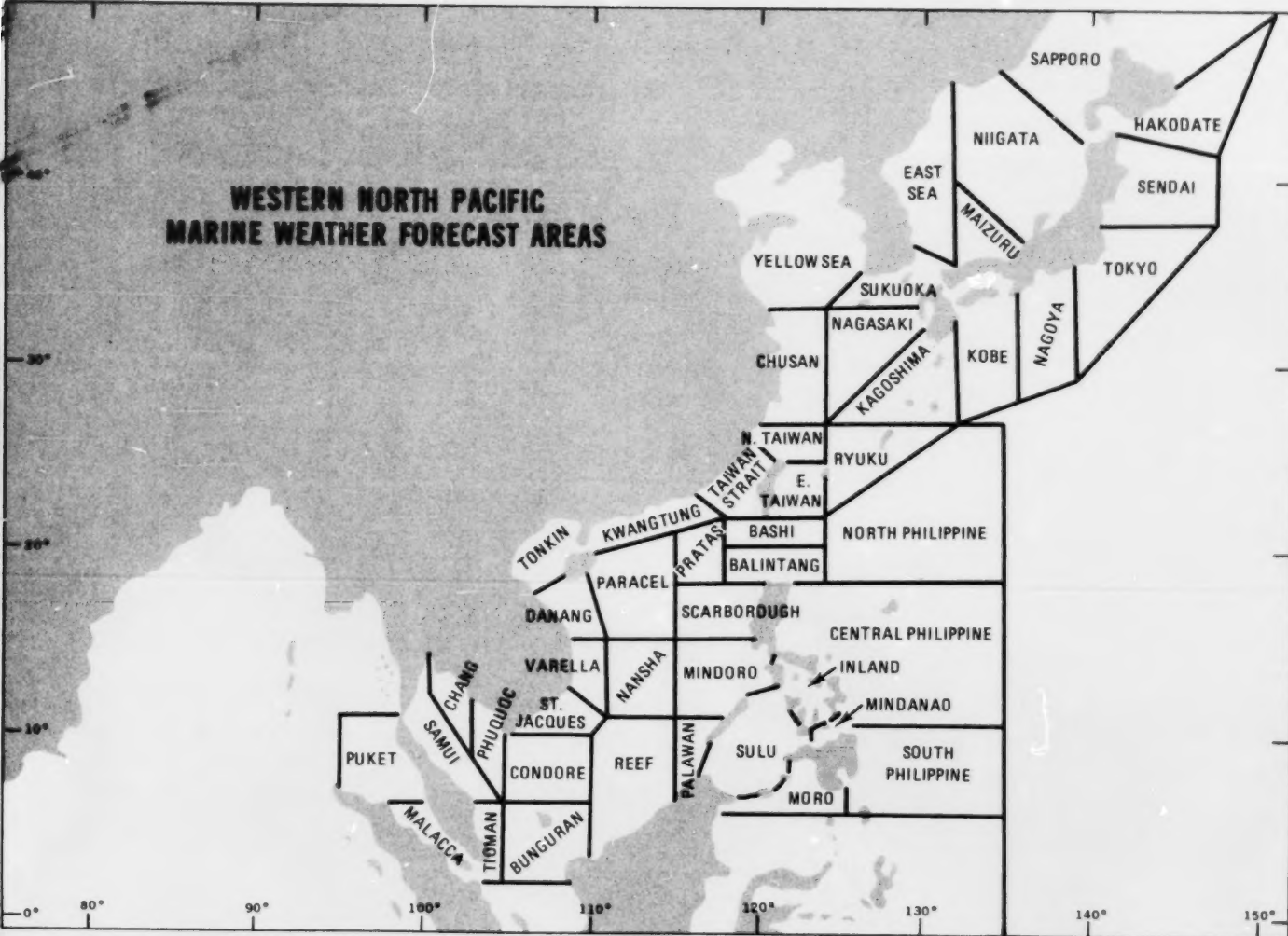


FIGURE 13

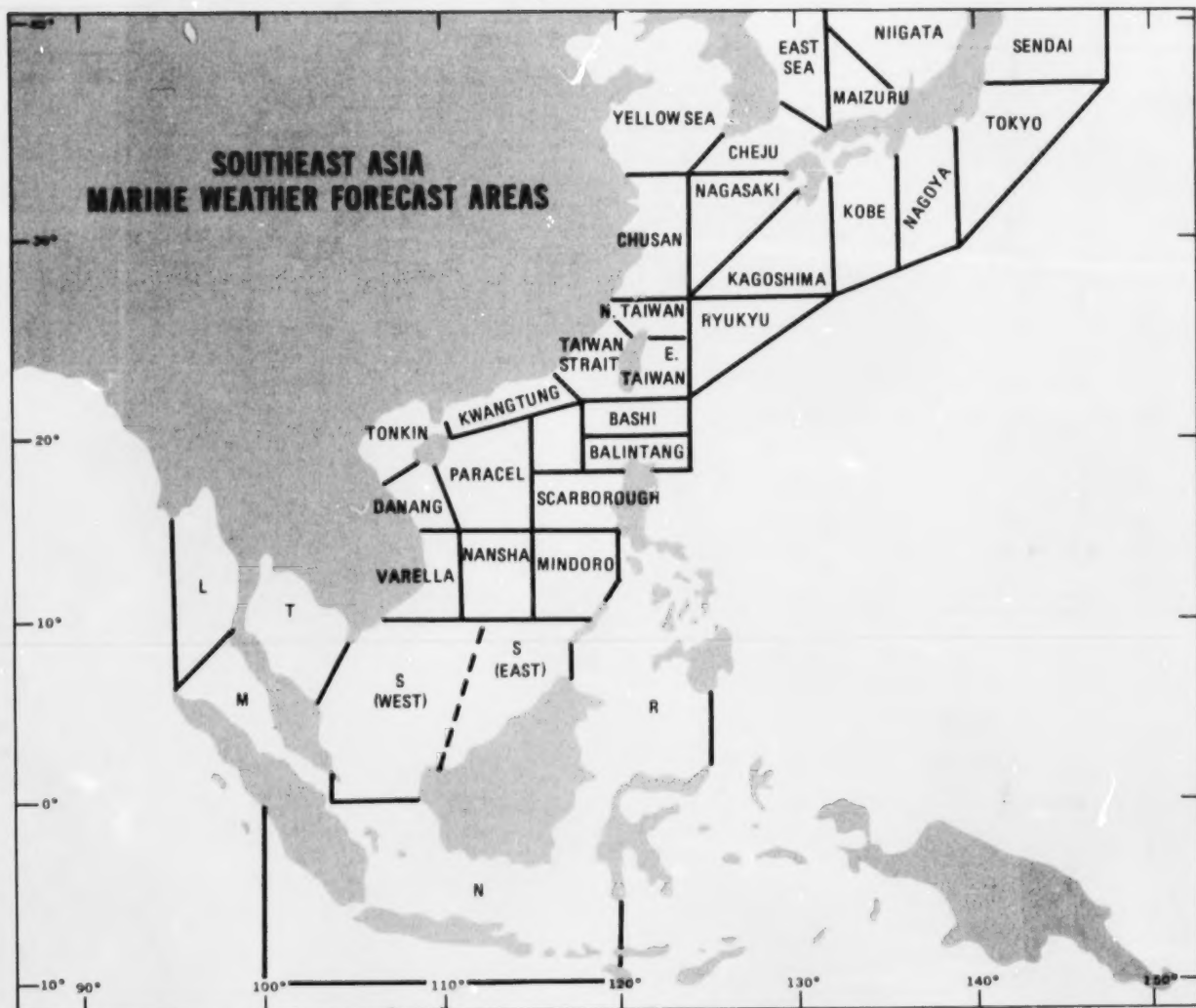


FIGURE 14

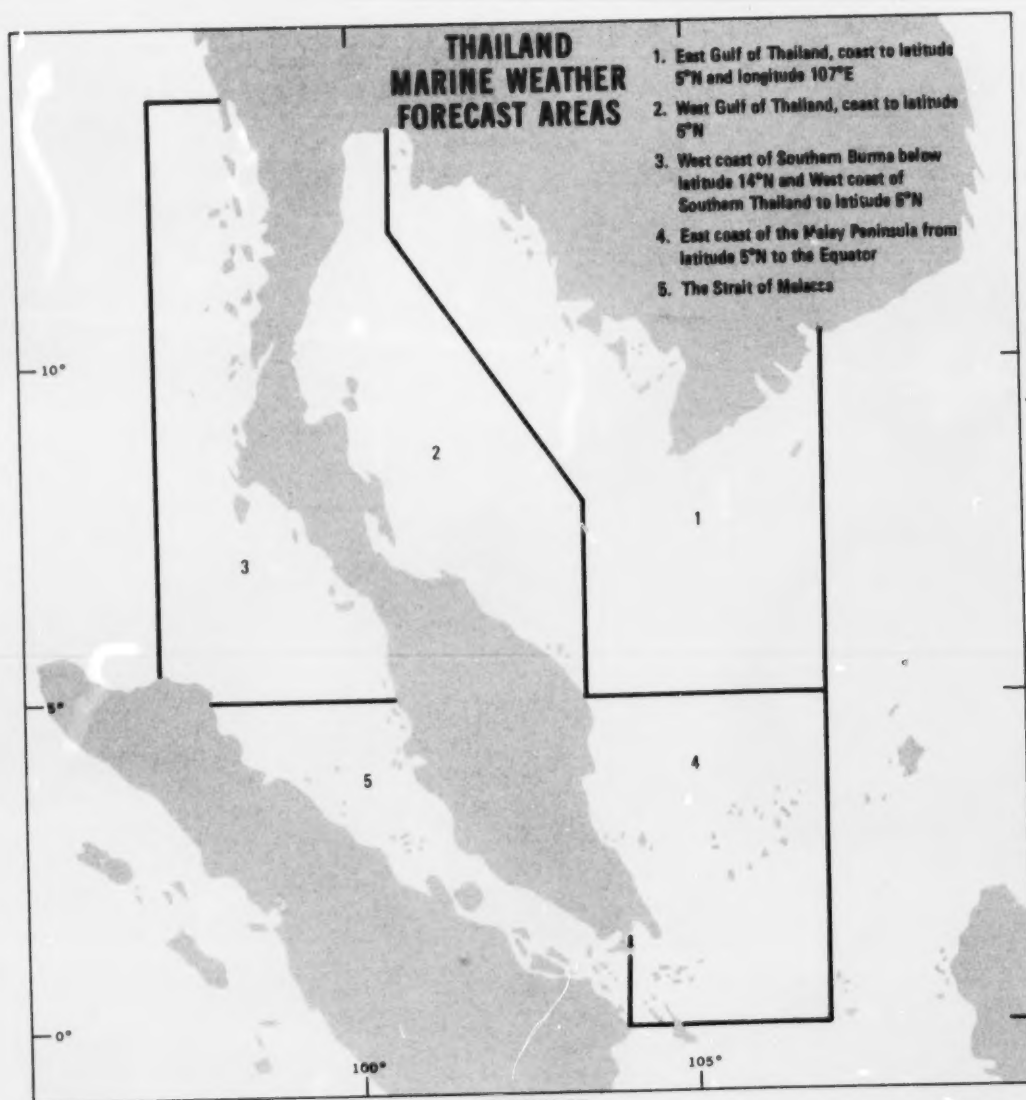


FIGURE 15

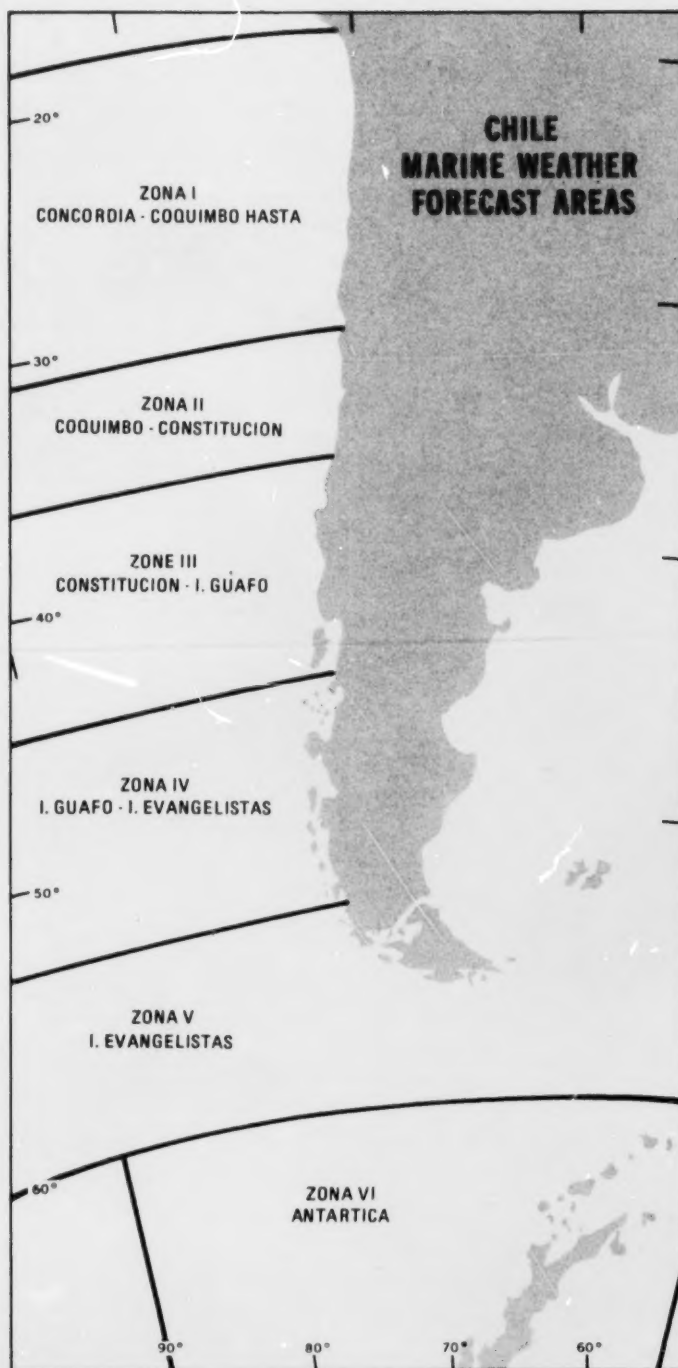


FIGURE 16

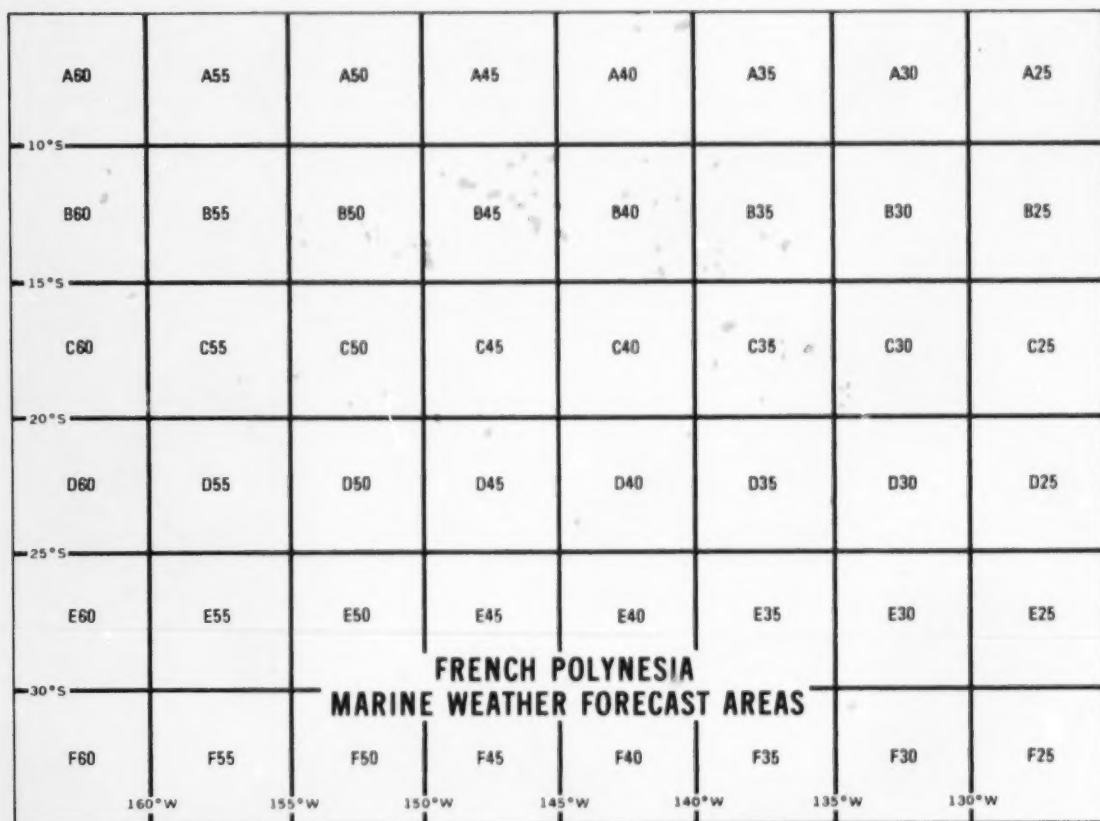


FIGURE 17

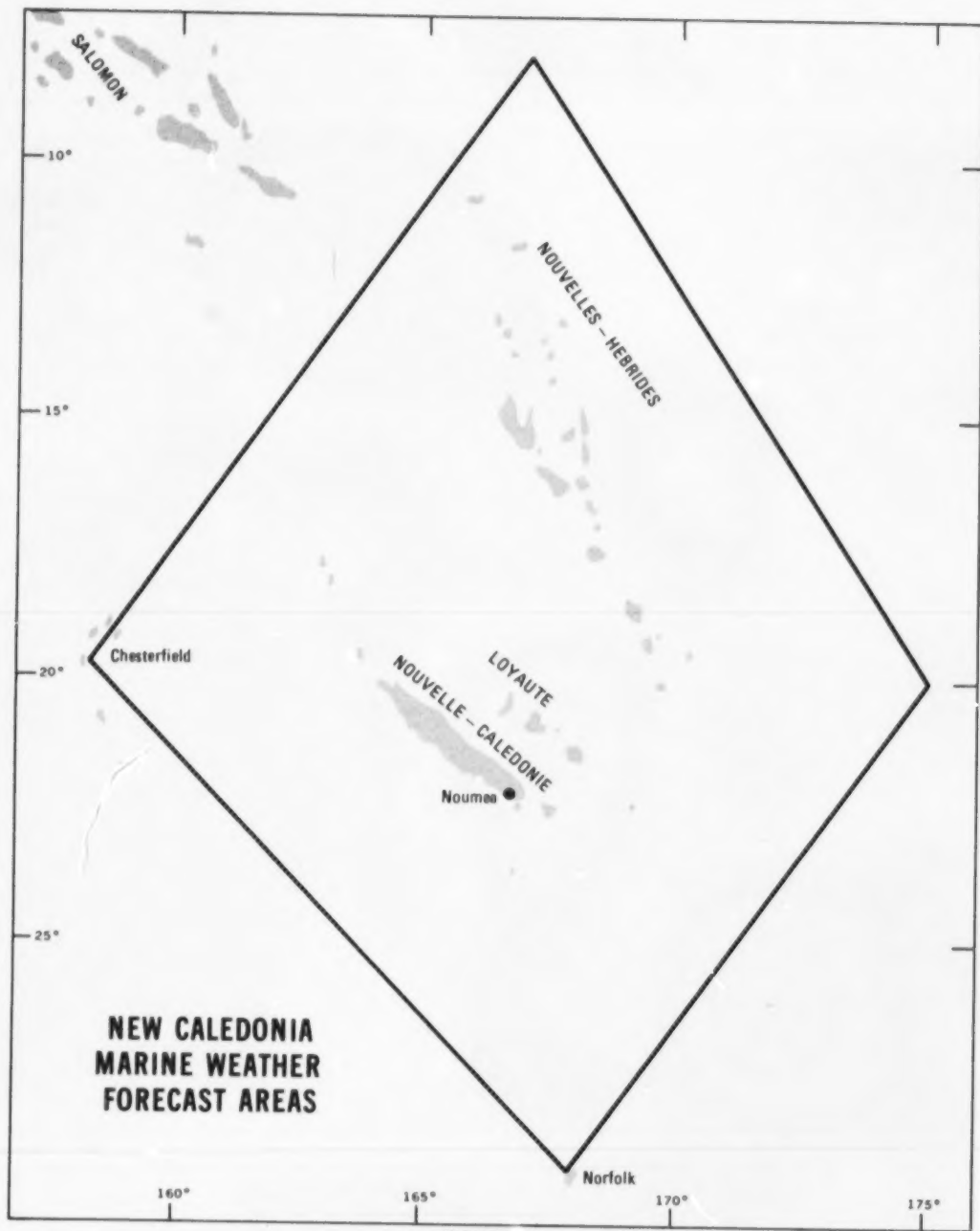
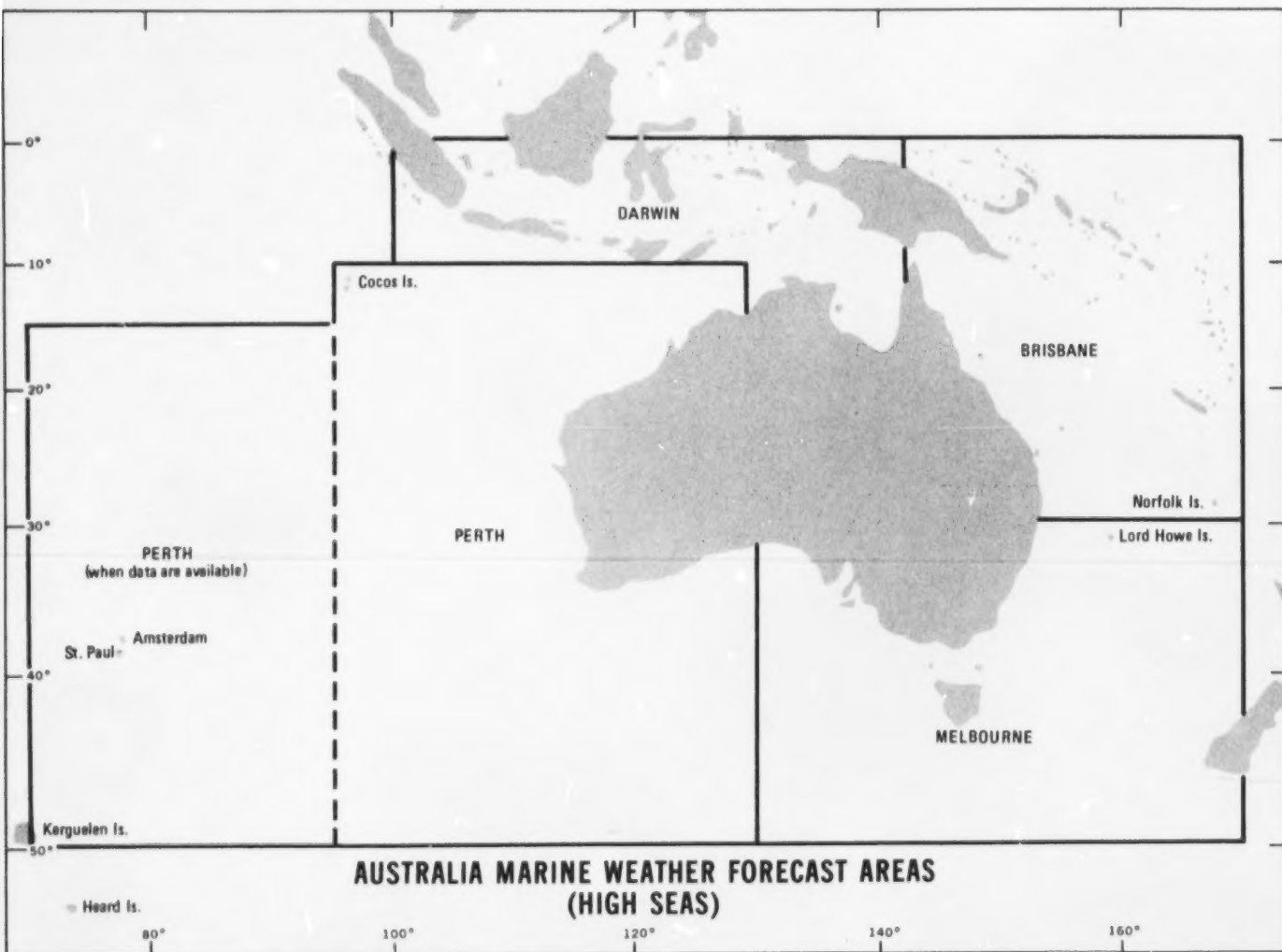


FIGURE 18



**AUSTRALIA MARINE WEATHER FORECAST AREAS
(HIGH SEAS)**

FIGURE 19

107

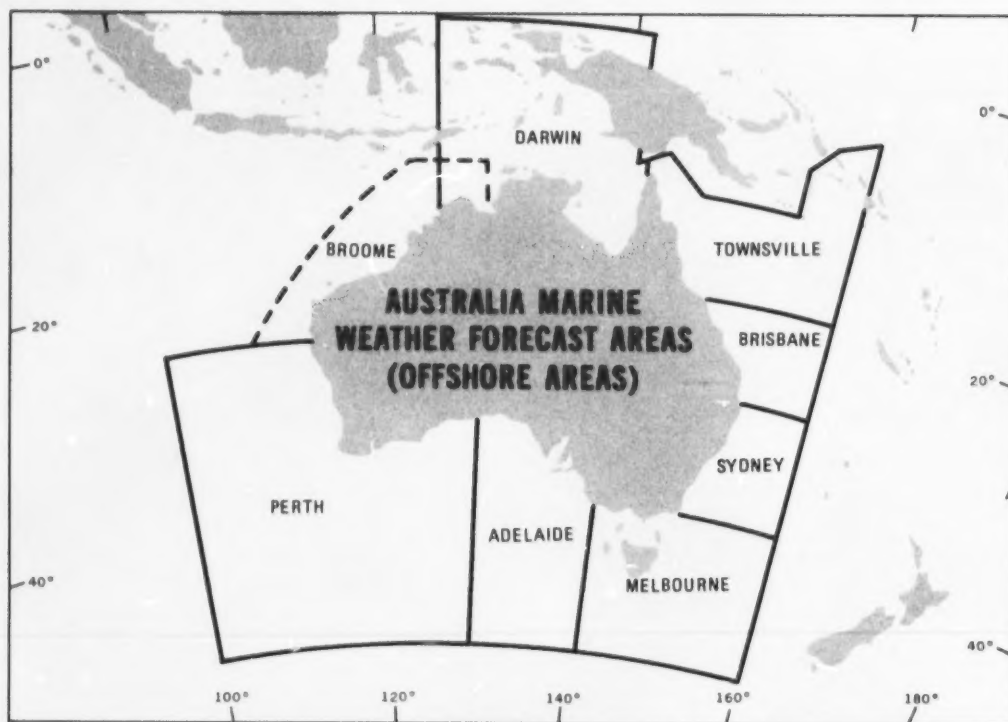


FIGURE 19A

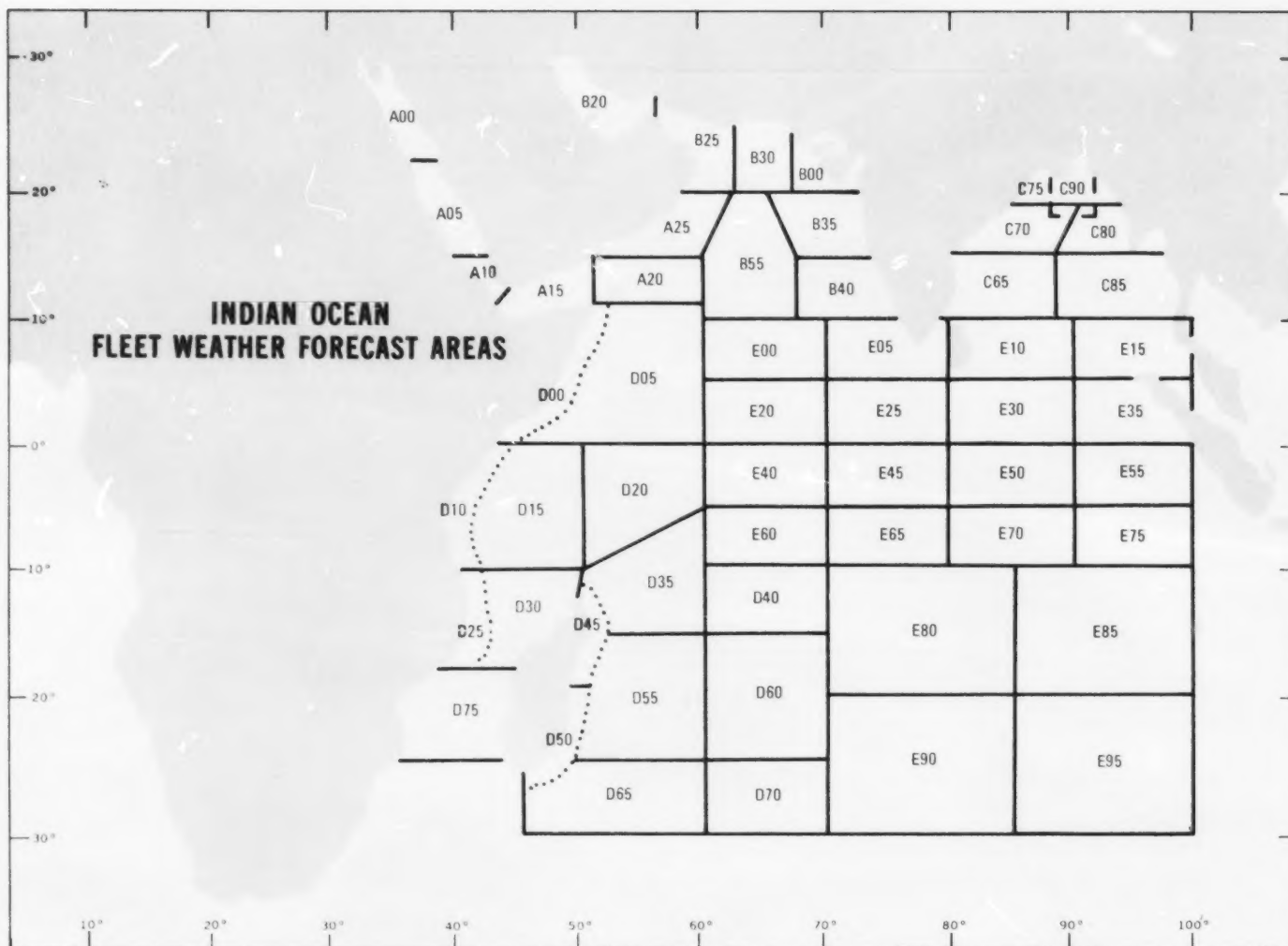


FIGURE 20

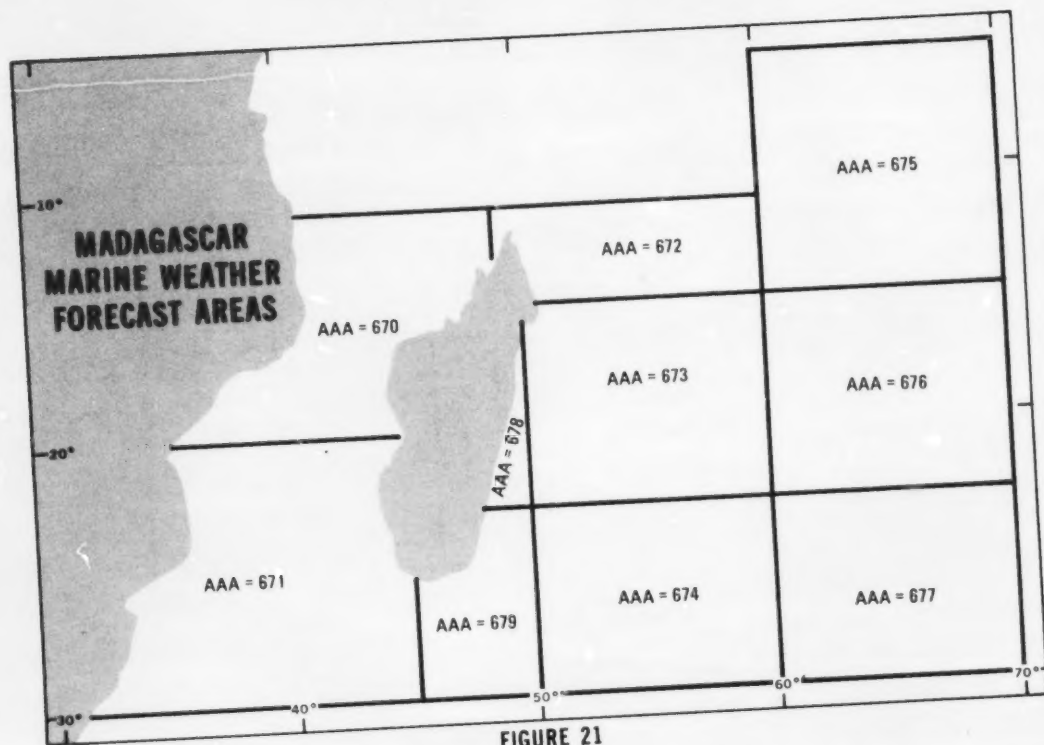


FIGURE 21

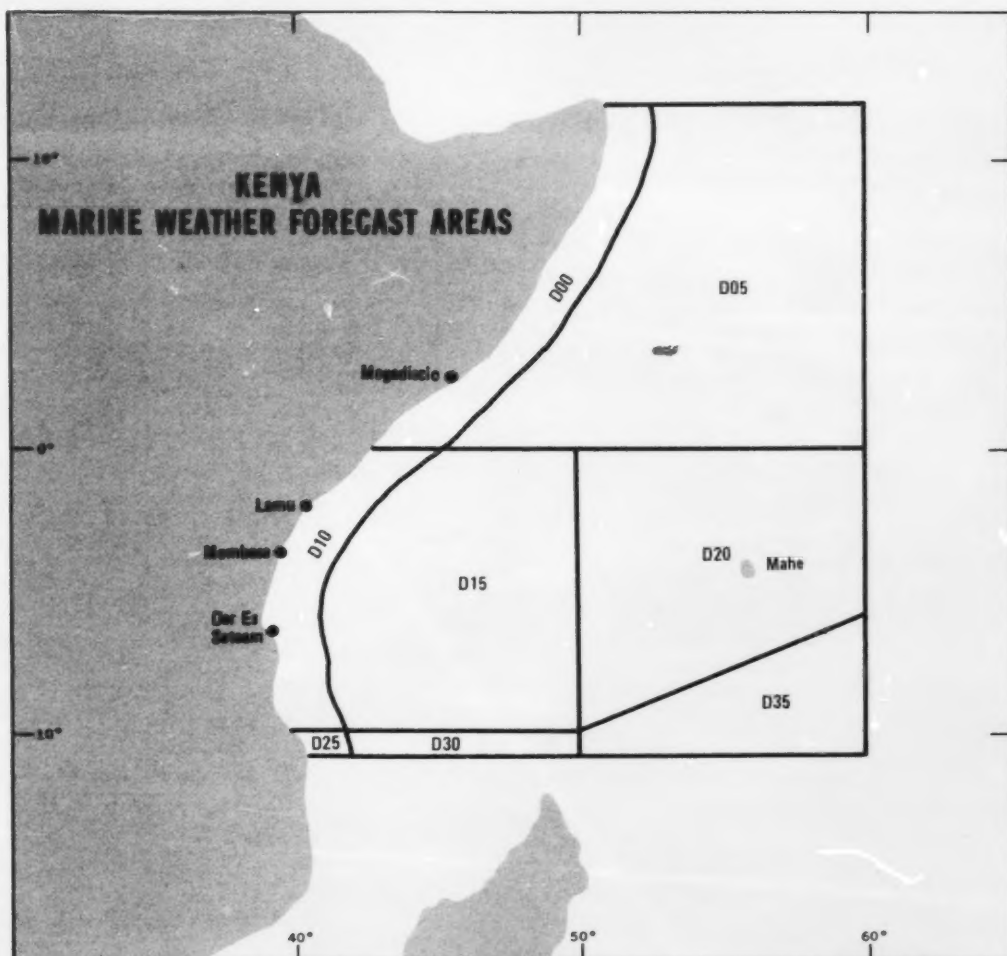


FIGURE 22

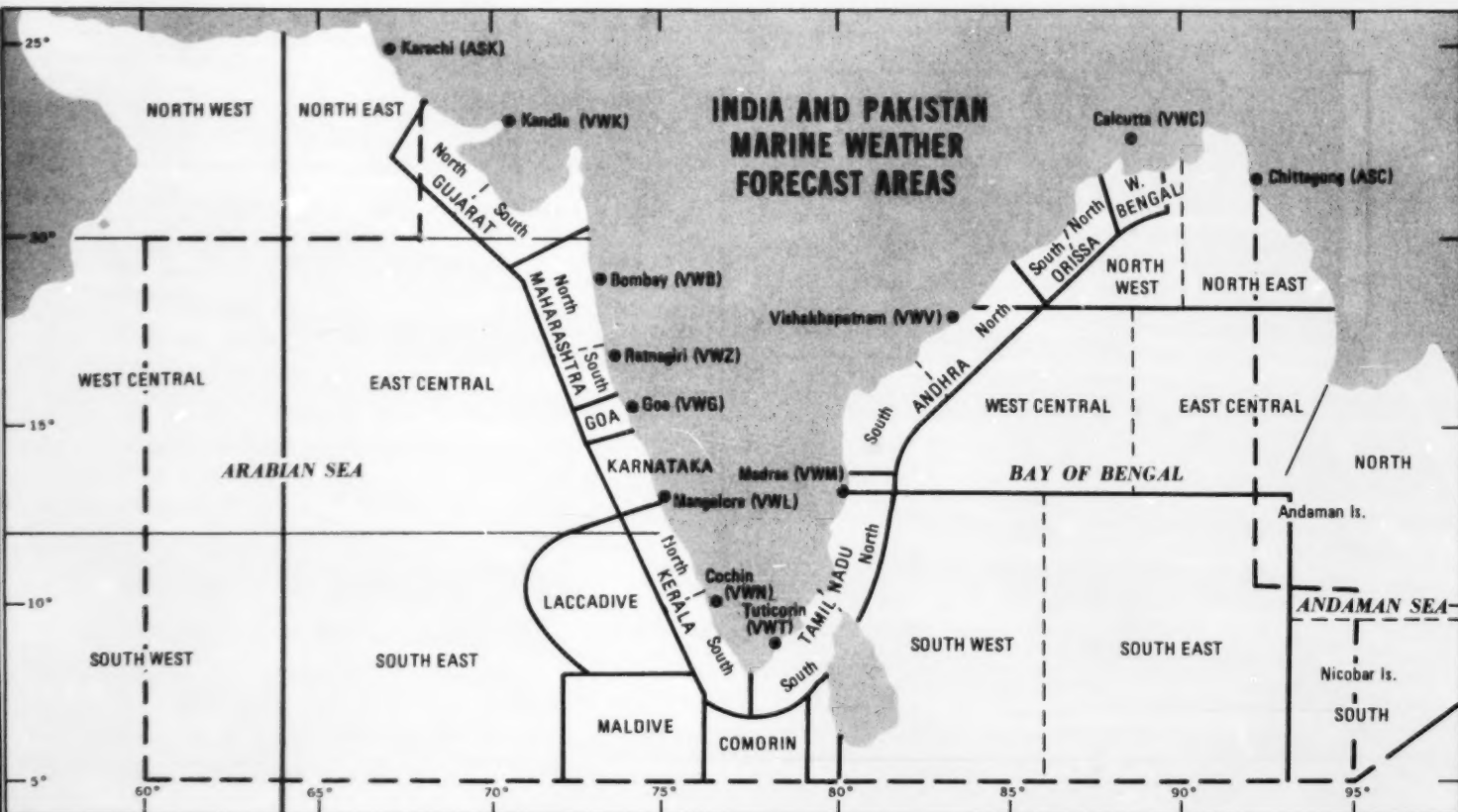


FIGURE 23

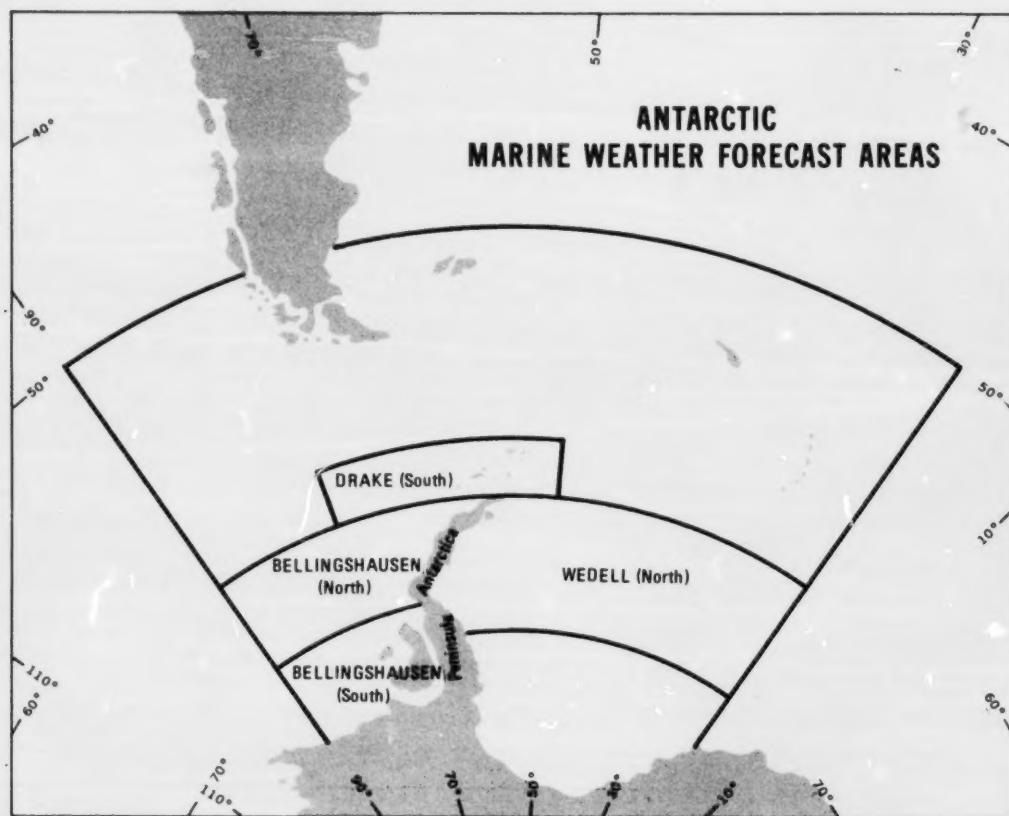


FIGURE 24

APPENDIX

Explanation of Terms Used in Sections 1 and 2 to Describe Message Contents

Analysis—Coded weather chart that shows pressure patterns and frontal systems over an area at a specified time.

Forecast—A statement describing weather and/or sea conditions expected in an area for a specified period of time in the future. (Usually 24 to 36 hours)

Ice Report—A statement giving information on ice conditions in coastal waters.

Prognosis—Coded weather chart that shows the expected pressure pattern for an area at a specified future time.

Synopsis—A verbal description of the most recent weather chart for an area, i.e., location and central pressure of high and low pressure centers, direction and speed of their movement, frontal systems, etc.

Synoptic Reports—Weather observation reports from land stations or ships.

Warnings—Gale, storm, or hurricane/typhoon warnings. Certain broadcasts also contain small-craft advisories. A description of each warning category follows:

SMALL-CRAFT ADVISORY (United States): The threshold conditions are usually 18 knots of wind (less than 18 knots in some dangerous waters) or hazardous wave conditions.

GALE WARNING: A warning to indicate that winds within the range 34 to 47 knots are forecast for the area.

STORM WARNING: A warning to indicate that winds 48 knots and above, no matter how high the speed, are forecast for the area. However, if the winds are associated with a tropical cyclone (hurricane/typhoon) the STORM WARNING display indicates that winds within the range 48 to 63 knots are forecast.

HURRICANE WARNING: In connection with a tropical cyclone (hurricane/typhoon) a warning to indicate that winds 64 knots and above are forecast for the area.

INTERPRETATION OF RADIOFACSIMILE WEATHER CHARTS

The radiofacsimile weather charts listed in section 3 are surface charts. Most of the analyses and prognoses will be similar to hand-plotted surface weather charts. However, some surface charts represent an attempt to present the weather pattern in a more descriptive way; in terms of the weather recognized by the mariner. The low-latitude charts transmitted by Radio NMC, San Francisco are a good example of this trend. On these charts, the sea-level pressure pattern has been replaced with streamlines depicting the direction of the wind. There is notation of wind speed and areas of significant weather and high waves. Centers of high and low pressure and frontal systems are also shown.

The following table explains the symbols and notation commonly used on radiofacsimile weather charts.

SYMBOLS FOR FRONTS, CONVERGENCE LINES, ETC.	
	COLD FRONT AT THE SURFACE
	COLD FRONT ABOVE THE SURFACE
	WARM FRONT AT THE SURFACE
	WARM FRONT ABOVE THE SURFACE
	OCCCLUDED FRONT AT THE SURFACE
	OCCCLUDED FRONT ABOVE THE SURFACE
	QUASI-STATIONARY FRONT AT THE SURFACE
	QUASI-STATIONARY FRONT ABOVE THE SURFACE
	CONVERGENCE LINE
	INTER-TROPICAL CONVERGENCE ZONE
NOTE: THE SEPARATION OF THE TWO LINES GIVES A QUALITATIVE REPRESENTATION OF THE WIDTH OF THE ZONE. THE HATCHED LINES MAY BE ADDED TO INDICATE AREAS OF ACTIVITY.	
AN ARROW INDICATES THE EXPECTED DIRECTION OF MOVEMENT OF A FRONT AND NEXT TO THE ARROW THE EXPECTED SPEED OF MOVEMENT (IN KNOTS) IS GIVEN.	

SYMBOLS FOR SIGNIFICANT WEATHER	SYMBOLS FOR TYPES OF AIR MASSES
	cA ARCTIC, CONTINENTAL
	mA ARCTIC, MARITIME
	cP POLAR, CONTINENTAL
	mP POLAR, MARITIME
	cT TROPICAL, CONTINENTAL
	mT TROPICAL, MARITIME
● RAIN	E EQUATORIAL
* SNOW	S SUPERIOR
	THE ABOVE SYMBOLS MAY BE FOLLOWED BY A SMALL LETTER "k" OR "w". THESE LETTERS INDICATE THE FOLLOWING:
	k THE AIR MASS IS COLDER THAN THE SURFACE OVER WHICH IT IS PASSING.
	w THE AIR MASS IS WARMER THAN THE SURFACE OVER WHICH IT IS PASSING.

OTHER SYMBOLS AND CONVENTIONS

	BOUNDARY OF AREAS OF SIGNIFICANT WEATHER
ABBREVIATIONS	
CLD —CLOUD	I.YR —LAYER OR LAYERED
FRQ —FREQUENT	OCNL —OCCASIONAL OR OCCASIONALLY
GRADU —GRADUAL OR GRADUALLY	SCT —SCATTERED

HIGH- AND LOW-PRESSURE CENTERS ARE REPRESENTED BY H AND L RESPECTIVELY, THE POSITION AT THE SURFACE OF THE POINT OF HIGHEST OR LOWEST PRESSURE BEING INDICATED BY + FOLLOWED BY THE VALUE OF THE MSL PRESSURE IN MILLIBARS. AN ARROW INDICATES THE EXPECTED DIRECTION OF MOVEMENT OF THE PRESSURE CENTER AND THE EXPECTED SPEED OF MOVEMENT (IN KNOTS). THE VALUE OF EACH ISOBAR (LINE OF EQUAL ATMOSPHERIC PRESSURE) IS LABELED.

DECODE FOR SURFACE ANALYSIS MESSAGES RECEIVED IN THE INTERNATIONAL ANALYSIS CODE, IAC FLEET, FM 46.D

Abbreviated sample of an analysis message:

Analysis follows	Indicator Group	Indicator Date	Time (GMT)	Indicator Group	Pressure system indicator	System type	Characteristic Pressure, tens and units	Position QL ₁ L ₁ L ₂ L ₃ L ₄ or L ₁ L ₂ L ₃ L ₄ L ₅ L ₆ k
10001	33300 or 33388	0 09 06	99900	8	1	3	80	0 64 60 or 64605

P ₁ —Pressure type	P ₂ —Pressure characteristics	Q—Octant of globe	k—Indicator used to specify half-degrees
0 Complex low	0 No specification	0 0° - 90° W	0 Take L ₁ L ₂ L ₃ L ₄ as sent
1 Low	1 LOW filling or HIGH weakening	1 90° W - 180°	1 Add ½ degree to L ₁ L ₂ east long. (0°-99°)
2 Secondary	2 Little change	2 180° - 90° E	2 Add ½ degree to L ₁ L ₂ or
3 Trough	3 LOW deepening or HIGH intensifying	3 90° E - 0°	3 Add ½ degree to L ₁ L ₂ & L ₃ L ₄ west long. (100°-180°)
4 Wave	4 Complex	5 0° - 90° W	4 See note below
5 High	5 Forming or existence suspected	6 90° W - 180°	5 Take L ₁ L ₂ L ₃ L ₄ as sent
6 Area of uniform pressure	6 Filling or weakening but not disappearing	7 180° - 90° E	6 Add ½ degree to L ₁ L ₂ west long. (0°-99°)
7 Ridge	7 General rise	8 90° E - 0°	7 Add ½ degree to L ₁ L ₂ or
8 Col	8 General fall		8 Add ½ degree to L ₁ L ₂ & L ₃ L ₄ east long. (100°-180°)
9 Tropical storm	9 Position doubtful		9 See note below

Note: When k = 4 or 9, the values of L₁L₂ and L₃L₄ are accurate to the nearest whole degree only; for all other values of k, the accuracy is to the nearest one-half degree.

Movement indicator for pressure system Direction (01-36) Speed (knots)	Indicator group	Front indicator Type of front Intensity	Characteristic	Position QL ₁ L ₁ L ₂ L ₃ L ₄ or L ₁ L ₂ L ₃ L ₄ L ₅ L ₆ k	Indicator group	Isobar indicator Pressure, whole millibars	QL ₁ L ₁ L ₂ L ₃ L ₄ L ₅ or L ₁ L ₂ L ₃ L ₄ L ₅ L ₆ k	Analysis ends
0 03 45	99911	66 4 8 0		04065 or 40655	99922	44 028	03070 or 30705	19191

m—Movement indicator

- 0 No specification
- 1 Stationary
- 2 Little change
- 3 Becoming stationary
- 4 Retarding
- 5 Curving to left
- 6 Recurring
- 7 Accelerating
- 8 Curving to right
- 9 Expected to recurve

F₁—Frontal type

- 0 Quasi-stationary front at surface
- 1 Quasi-stationary front above the surface
- 2 Warm front at the surface
- 3 Warm front above the surface
- 4 Cold front at the surface
- 5 Cold front above the surface
- 6 Occlusion
- 7 Instability line
- 8 Intertropical front
- 9 Convergence line

F₂—Frontal intensity

- 0 No specification
- 1 Weak, decreasing
- 2 Weak, little or no change
- 3 Weak, increasing
- 4 Moderate, decreasing
- 5 Moderate, little or no change
- 6 Moderate, increasing
- 7 Strong, decreasing
- 8 Strong, little or no change
- 9 Strong, increasing

F₃—Frontal characteristics

- 0 No specification
- 1 Frontal—decreasing activity—little change area—increasing
- 2 Frontal—decreasing activity—little change area—increasing
- 3 Frontal—decreasing activity—little change area—increasing
- 4 Intertropical
- 5 Forming or existence suspected
- 6 Quasi-stationary
- 7 With waves
- 8 Diffuse
- 9 Position doubtful

GENERAL INFORMATION

Indicator groups and figures shown with heavy underscoring always appear in coded analysis messages. Additional latitude and longitude groups follow in the messages to indicate the points through which fronts and isobars should be drawn. In analysis messages, isobars are usually given for 8-millibar intervals. Intermediate isobars can then be sketched to complete the pattern.

Indicator Groups

- 33300 Positions in form $L_n L_n L_o L_o k$, in northern hemisphere ($L_n L_n$ = latitude; $L_o L_o$ = longitude; k is used to specify the half-degrees, if any, to be added to $L_n L_n$ or $L_o L_o$)
- 33388 Positions in form $QL_n L_n L_o L_o$ (Q = Octant of the globe)
- 99900 Pressure systems follow
- 99911 Frontal systems follow
- 99922 Isobar section follows

Indicator Figures

- 0 - Indicator for date and time group
- 8 - Indicator for pressure system group
- 44 - Indicator for isobar group
- 66 - Indicator for frontal system group

DECODE FOR GREAT LAKES AND SEAWAY MARINE FORECASTS

MAFOR YYG₁G₁ (NAME OF LAKE) 1GDF_mW₁

KEYWORD (Indicating Marine Forecast)	DAY OF MONTH (GMT)	TIME (GMT) FORECAST PERIOD BEGINS	SOLIDUS	NAME OF LAKE OR SEAWAY*	GROUP INDICATOR	FORECAST PERIOD	WIND DIRECTION	WIND SPEED	FORECAST WEATHER	HEIGHT OF WAVES IN FEET AT END OF THE MESSAGE FOR EACH LAKE, FOR THE ENTIRE PERIOD
	YY	G ₁ G ₁				G	D	F _m	W ₁	WAVES 5 TO 10 FEET
MAFOR	06	12	/	SUPERIOR*	1	6	8	3	0	

G—FORECAST PERIOD
0—Condition at beginning of forecast period
1—Valid for 3 hours
2—Valid for 6 hours
3—Valid for 9 hours
4—Valid for 12 hours
5—Valid for 18 hours
6—Valid for 24 hours
7—Valid for 48 hours
8—Valid for 72 hours
9—Occasionally

D—WIND DIRECTION
0—Calm
1—Northeast
2—East
3—Southeast
4—South
5—Southwest
6—West
7—Northwest
8—North
9—Variable

F _m —WIND SPEED
0—0 to 10 knots
1—11 to 16 knots
2—17 to 21 knots
3—22 to 27 knots
4—28 to 33 knots
5—34 to 40 knots
6—41 to 47 knots
7—48 to 55 knots
8—56 to 63 knots
9—64 knots and above

W ₁ —FORECAST WEATHER
0—Moderate or good visibility, more than 3 nautical miles
1—Risk of accumulation of ice on superstructures (Temp. 23° to 32° F.)
2—Strong risk, accumulation of ice on superstructures (Temp. below 23° F.)
3—Mist (visibility ¾ to 3 nautical miles)
4—Fog (visibility less than ¾ nautical miles)
5—Drizzle
6—Rain
7—Snow, or rain and snow
8—Squally weather with or without showers
9—Thunderstorms

*Statement in plain language of Gale or Storm warnings, if any, will follow name of lake or seaway. Small-Craft Advisories are *not* included in MAFOR broadcasts. Time of warnings are in Eastern Standard Time (EST).

The forecast 1GDF_mW₁ may be repeated as many times as necessary to describe the changes in wind and weather expected in a given area during the 24-hr. forecast period. The forecast 1GDF_mW₁ in which G=1-8, refers to the forecast weather commencing at the time given in the group YYG₁G₁/ and continuing through the period indicated by G. Subsequent 1GDF_mW₁ (G=1-8) indicate the period of time that the described weather is forecast to persist, commencing at the end of the period specified in the preceding

group 1GDF_mW₁ (G=1-8). Any forecast 1GDF_mW₁ (G=1-8) may be followed by 1GDF_mW₁ (G=9); in such cases, G=9 indicates a phenomenon forecast to occur occasionally in the forecast period. On occasion, plain language words are used to describe weather conditions not easily described by the code tables; times are stated in EST.

Wave forecast indicates the expected wave heights at the downwind end or side of the lake; this being the area where the wave height buildup is greatest. Times in EST. Wave heights are usually specified as a range for the 24-hr. period, but significant changes (generally variations of more than 5 ft.) will be stated.

1 Forecast periods begin at 0000, 0600, 1200, and 1800 G.M.T.

EXAMPLE OF MAFOR BROADCAST

Message

MAFOR 1512/ SUPERIOR 12320 14336 12630
 WAVES 5 TO 10 FEET
 MICHIGAN 12420 19759 15630
 WAVES 5 TO 10 FEET BRIEFLY 15 FEET WITH
 THUNDERSTORMS
 HURON 10436 12746 15730
 WAVES INCREASING RAPIDLY TO 15 FEET
 DECREASING AFTER 1200 EST TO 8 FEET

Decode

Forecast for 15th day of month, 1200 GMT: *Lake Superior*—During first 6 hours, southeasterly winds 17 to 21 knots, moderate or good visibility. During the next following 12 hours, southeasterly winds 22 to 27 knots, rain. During the final 6 hours, westerly winds 22 to 27 knots, moderate or good visibility.

Lake Michigan—During first 6 hours, southerly winds 17 to 21 knots, moderate or good visibility, occasional thunderstorms accompanied by northwesterly winds 34 to 40 knots. During the next following 18 hours, westerly winds 21 to 27 knots, moderate or good visibility.

Lake Huron—At beginning of forecast period, southerly winds 22 to 27 knots, rain. Within an hour or so after beginning of forecast period and continuing for remainder of first 6-hour period, winds northwesterly 28 to 33 knots, rain. During the final 18 hours northwesterly winds 17 to 21 knots, moderate or good visibility.

SURFACE REPORT CODES

FM 11.E—Surface report from land station:

IIiii Nddff VVwwW PPPTT $N_h C_L h C_M C_H$
 $T_d T_d j_s j_p$

FM 21.E—Surface report from ship, in full form:

99L_sL_sL_s Q_cL_oL_oL_oL_o YYGGi_w Nddff VVwwW
 PPPTT $N_h C_L h C_M C_H$ D_sv_sapp (7RRjj) (8N_sCh_sh_s)
 (9S_pS_pS_p) (0T_sT_sT_sT_s) (1T_wT_wT_wT_w) (2I_sE_sE_sR_s) (3P_wP_wH_wH_w)
 (d_wd_wP_wH_wH_w) ICE followed by plain language or by (c₂KD₁re)

FM 22.E—Surface report from ship, in abbreviated form:

99L_sL_sL_s Q_cL_oL_oL_oL_o YYGGi_w Nddff VVwwW
 PPPTT $N_h C_L h C_M C_H$ (D_sv_s//) (2I_sE_sE_sR_s)

FM 23.E—SHRED—Surface report from ship in reduced form:

SHRED 99L_sL_sL_s Q_cL_oL_oL_oL_o YYGGi_w Nddff
 VVwwW PP/TT (D_sv_s//) (2I_sE_sE_sR_s)

Note: Complete information on these surface codes, including tables for each element, is found in Federal Meteorological Handbook No. 2, "Synoptic Code." The publication can be purchased from Superintendent of Documents, Government Printing Office, Washington, D.C. 20402; price \$1.50.

LIST OF TERMS USED IN MARINE WEATHER BROADCASTS
(ENGLISH, FRENCH AND SPANISH)

ENGLISH	FRANCAIS	ESPAÑOL
List of terms used in weather bulletins for shipping	Liste des termes utilisés dans les bulletins météorologiques destinés à la navigation maritime	Lista de los términos usados en los boletines meteorológicos destinados a la navegación marítima

1	2	3
<u>Standards of time</u>	<u>Unité de temps</u>	<u>Unidades de tiempo</u>
Greenwich Mean Time (GMT)	Temps moyen de Greenwich (TMG)	Hora media de Greenwich (TMG)
Standard time	Temps universel	Hora universal
Zone time	Heure du fuseau	Hora del huso
Summer time	Heure d'été	Hora de verano
Local time	Heure locale	Hora local
 <u>Periods of time</u>	 <u>Périodes de temps</u>	 <u>Períodos de tiempo</u>
six hours	six heures	seis horas
twelve hours	douze heures	doce horas
eighteen hours	dix-huit heures	diez y ocho horas
twenty-four hours	vingt-quatre heures	veinticuatro horas
thirty-six hours	trente-six heures	treinta y seis horas
forty-eight hours	quarante-huit heures	cuarenta y ocho horas
to-day	aujourd'hui	hoy
to-morrow	demain	mañana
next few days	les prochains jours	los próximos días
morning	matin	mañana
evening	soir	tarde, noche
midday	midi	mediodía
afternoon	après-midi	tarde
day	jour	día
night	nuît	noche
sunrise	lever du soleil	salida del sol
sunset	coucher du soleil	puesta del sol

1	2	3
<u>Preliminary terms</u>	<u>Termes préliminaires</u>	<u>Términos preliminares</u>
Forecast	Prévision	Predicción
Further outlook	Evolution probable	Evolución probable ulterior
General inference	Prévision générale	Predicción general
General statement	Situation générale	Situación general
Long-range forecast	Prévision à longue échéance	Predicción a largo plazo
Medium-range forecast	Prévision à moyenne échéance	Predicción a plazo medio
Short-range forecast	Prévision à courte échéance	Predicción a corto plazo
Synoptic situation	Situation synoptique	Situación sinóptica
Warning	Avis	Aviso
<u>Terms of position</u>	<u>Termes de position</u>	<u>Términos de posición</u>
degrees	degrés	grados
latitude	latitude	latitud
longitude	longitude	longitud
quadrant	quadrant	cuadrante
hemisphere	hémisphère	hemisferio
north	Nord	norte
south	Sud	sur
east	Est	este
west	Ouest	oeste
district	district	distrito
parallel	parallèle	paralelo
meridian	méridien	meridiano
square	carré	cuadro, cuadrícula
bearing	relèvement	rumbo
direction	direction	dirección
track	trajet	trayectoria
area	zone	área
line	ligne	línea
<u>Storm warnings</u>	<u>Avis de tempête</u>	<u>Avisos de temporales</u>
gale warning	avis de coup de vent	aviso de viento duro
storm warning	avis de tempête	aviso de temporal
hurricane warning	avis d'ouragan	aviso de huracán
blizzard	blizzard	blizzard
<u>Tropical storms</u>	<u>Cyclones tropicaux</u>	<u>Ciclones tropicales</u>
tropical cyclone	cyclone tropical	ciclón tropical
hurricane	ouragan	huracán
tornado	tornado	tornado
typhoon	typhon	tifón
baguio	baguio	baguio
willy-willy	willy-willy	willy-willy

1

Pressure systems

area of low pressure
low
trough
area of high pressure
high
ridge (of high pressure)
belt of high pressure
belt of low pressure
col
hyperbolic point
cyclolysis
cyclogenesis
anticyclolysis
anticyclogenesis

Air mass nomenclature

air mass
stable air mass
unstable air mass
cold air
arctic air
antarctic air
polar air
warm air
tropical air
subtropical air
equatorial air
maritime air
continental air
winter monsoon
summer monsoon

Fronts nomenclature

front
polar front
cold front
secondary cold front
warm front
occlusion
cold occlusion

warm occlusion

upper front
intertropical front
frontal wave
frontogenesis
frontolysis

2

Systèmes de pression

zone de basses pressions
dépression
creux barométrique
zone de hautes pressions
anticyclone
crête barométrique
ceinture de hautes pressions
ceinture de basses pressions
col barométrique
point hyperbolique
cyclolyse
cyclogénèse
anticyclolyse
anticyclogénèse

Nomenclature des masses d'air

masse d'air
masse d'air stable
masse d'air instable
air froid
air arctique
air antarctique
air polaire
air chaud
air tropical
air subtropical
air équatorial
air maritime
air continental
mousson d'hiver
mousson d'été

Nomenclature des fronts

front
front polaire
front froid
front froid secondaire
front chaud
occlusion
occlusion à caractère
de front froid
occlusion à caractère
de front chaud
front en altitude
front intertropical
onde frontale
frontogénèse
frontolyse

3

Sistemas de presión

área de bajas presiones
depresión barométrica
vaguada
área de altas presiones
anticiclón
cresta de alta presión
cinturón de altas presiones
cinturón de bajas presiones
collado
punto hiperbólico
ciclólisis
ciclogénesis
anticiclólisis
anticiclogénesis

Nomenclature de las masas de aire

masa de aire
masa de aire estable
masa de aire inestable
aire frío
aire ártico
aire antártico
aire polar
aire cálido
aire tropical
aire subtropical
aire ecuatorial
aire marítimo
aire continental
monzón de invierno
monzón de verano

Nomenclature de los frentes

frente
frente polar
frente frío
frente frío secundario
frente caliente
ocusión
ocusión con carácter
de frente frío
ocusión con carácter
de frente caliente
frente en altitud
frente intertropical
onda frontal
frontogénesis
frontólisis

1	2	3
<u>Weather</u>	<u>Temps</u>	<u>Tiempo</u>
<u>Precipitation</u>	<u>Précipitation</u>	<u>Precipitación</u>
rain	pluie	lluvia
freezing rain	pluie se congelant	lluvia engelante
rain and snow mixed	pluie et neige mêlées	lluvia y nieve mezcladas
supercooled rain	pluie surfondue	lluvia subfundida
snow	neige	nieve
snow pellets	neige roulée	nieve granulada
snow grains	neige en grains	cinarra, gragea
drizzle	bruine	llovizna
hail	grêle	granizo
ice needles	aiguilles de glace	agujas de hielo
ice pellets	granulés de glace, grésil	hielo granulado
shower	averse	chubasco
<u>Visibility</u>	<u>Visibilité</u>	<u>Visibilidad</u>
fog	brouillard	niebla
mist	brume	neblina
haze	brume sèche	calima
duststorm	tempête de poussière	tempestad de polvo
sandstorm	tempête de sable	tempestad de arena
<u>Miscellaneous</u>	<u>Divers</u>	<u>Misceláneos</u>
cloud	nuage	nube
clearing up	éclaircie	aciarar, claro
line squall	grain en ligne	turbonada en línea
whirlwind	tourbillon de vent	remolino de viento
water-spout	trombe marine	tromba marina
frost, freezing	gelée, gel	helada
rime	givre blanc	cancellada blanca
glaze	givre transparent	cancellada transparent
smoke	fumée	humo
thunderstorm	orage	tormenta
thunder	tonnerre	trueno
lightning	éclairs	relámpago

1	2	3
<u>Wind</u>	<u>Vent</u>	<u>Viento</u>
<u>General terms</u>	<u>Termes généraux</u>	<u>Términos generales</u>
Beaufort Scale	Echelle de Beaufort	Escala Beaufort
calm	calme	calma
light air	très légère brise	ventolina
light breeze	légère brise	brisa muy débil
gentle breeze	petite brise	brisa débil
moderate breeze	jolie brise	brisa moderada
fresh breeze	bonne brise	brisa fresca
strong breeze	vent frais	brisa fuerte
near gale	grand frais	frescachón, viento fuerte
gale	coup de vent	viento duro
strong gale	fort coup de vent	viento muy duro
storm	tempête	temporal
violent storm	violente tempête	temporal duro, borrasca
hurricane	ouragan	huracán
gust	rafale	ráfaga, racha
squall	grain	turbonada
sea breeze	brise de mer	brisa de mar
land breeze	brise de terre	brisa de tierra
prevailing wind	vent dominant	viento dominante
shift of wind	saut de vent	salto de viento
veer (clockwise change in direction)	rotation du vent cum sole (dans le sens des aiguilles d'une montre)	en el sentido de las agujas del reloj
back (clockwise change in direction)	rotation du vent contra sole (dans le sens contraire des aiguilles d'une montre)	en el sentido contrario de las agujas del reloj
<u>Local names</u>	<u>Noms locaux</u>	<u>Nombres locales</u>
trade winds (trades)	alizés	vientos alisios (alisios)
bora	bora	bora
mistral	mistral	mistral
sirocco	sirocco	sirocco
gregale	grégal	gregal
levanter	levante	levante
norther	norther	nortada

1	2	3
<u>Ice</u>	<u>Glace</u>	<u>Hielo</u>
bay-ice	glace de baie	hielo de bahía
berg-ice	berg-ice	tempanito
brash-ice	brash	escombros de hielo
fast ice	banquise côtière	hielo fijo
growler	bourguignon (ou growler)	gruñón
hummocked ice	glace hummockée	hielo amonticulado
iceberg	iceberg	témpano
ice-edge	lisière de glaces	borde del hielo
ice-field, field of ice	champ de glaces (ou ice-field)	campo de hielo
ice floe, floe	floe	bandeja
ice limit	limite des glaces	límite del hielo
ice-shelf	ice shelf (talus de glace ou falaise de glace)	barrera de hielo
level ice	glace unie	hielo plano
new ice	glace nouvelle	hielo nuevo
pack-ice, drift-ice	pack (ou banquise)	hielo a la deriva
polar ice	glace polaire	hielo polar
shore lead	chenal côtier	canal costero
slush or sludge	slush (ou sludge)	pasta / grumo
winter-ice	glace de l'année	hielo de invierno
young ice	jeune glace	hielo joven
<u>Miscellaneous nautical terms</u>	<u>Termes nautiques divers</u>	<u>Términos náuticos diversos</u>
sea	mer	mar
sea level	niveau de la mer	nivel del mar
horizon	horizon	horizonte
tsunamis	tsunamis (vagues d'origine sismique)	tsunamis
swell	houle	mar de fondo
tide	marée	marea
surge	lame	oleada
surf	déferlement	resaca
breakers	brisants	rompientes
wave	vague	ola
wavelet	vaguelette	ola pequeña

1	2	3
<u>General descriptive terms</u>	<u>Termes descriptifs généraux</u>	<u>Términos descriptivos generales</u>
slight	léger (faible)	leve
moderate	modéré	moderado
violent	violent	violento
heavy	lourd (gros)	fuerte
strong	fort	fuerte
dry	sec	seco
damp	humide	húmedo
in patches	par plaques	en bancos
extensive	étendu	extenso
low	bas	baja
high	haut	alta
rough	forte	duro
recurve	se recourber	recurvarse
quickly	rapidement	rápidamente
slowly	lentement	lentamente
filling up	se comblant	llenándose
increasing	croissant	aumentando
decreasing	décroissant	disminuyendo
breaking up	se dissolvant	disipándose
poor	mauvais	malo
good	bon	bueno
spreading	s'étendant	extendiéndose
occasional	occasionel	ocasional
continuous	continu	continuo
intermittent	intermittent	intermitente
at times	de temps à autre	a veces
immediately	immédiatement	inmediatamente
early	tôt	pronto
late	tard	tarde
later	plus tard	luego, más tarde

Date Submitted: _____ Name of Ship _____

Signature of Radio Officer: _____

Name of Radio Station	Call Sign	Remarks

Date Submitted: _____ Name of Ship _____

Signature of Radio Officer: _____

Name of Radio Station	Call Sign	Remarks

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